

# soft sector

*The Monthly Magazine For Sanyo MBC-550 and 555 Users*

## **NEW ARRIVAL** **The MBC-775 Portable**



**Inside:**

**A Database Manager**

**A Stock Forecaster**

**A Graphics Editor**

**PLUS: Reviews of the latest software and technical Q & A's**



**Reader Survey And  
Video RAM Board  
Drawing — See  
Page 84.**



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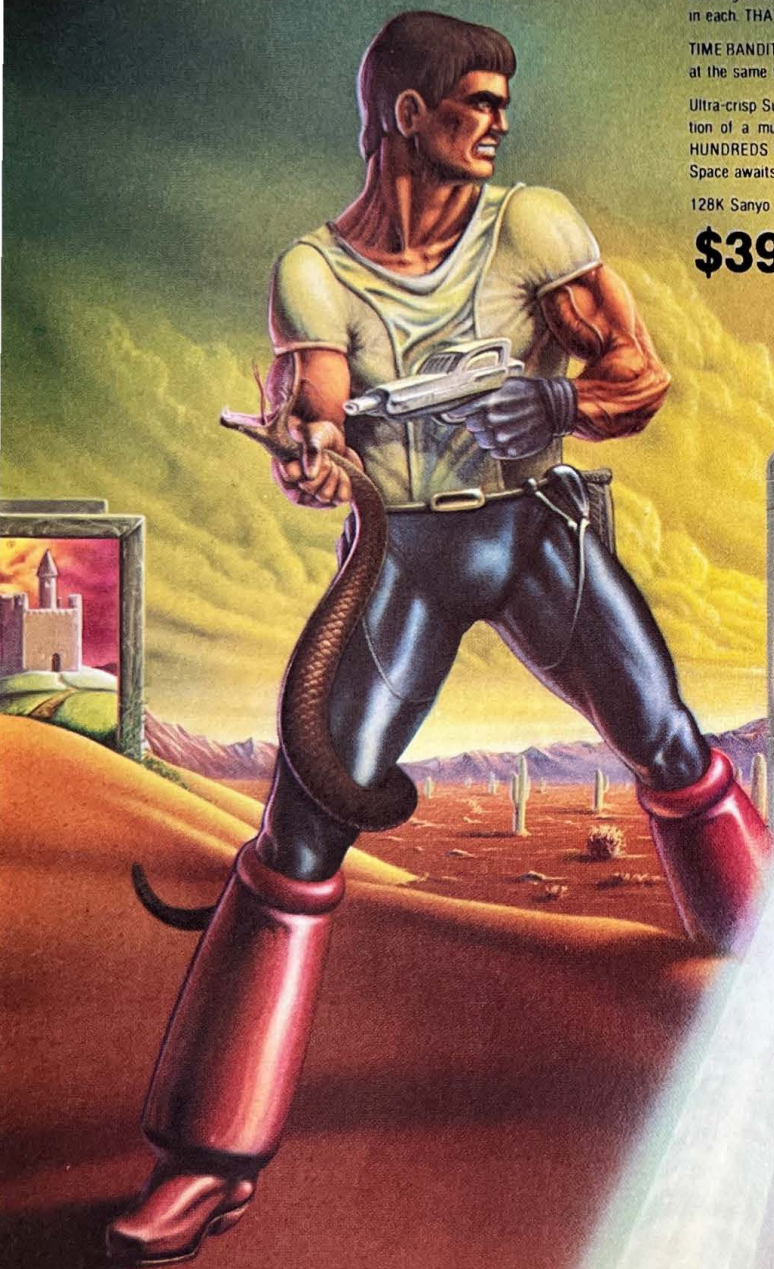
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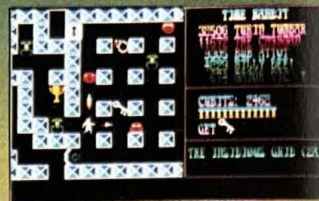
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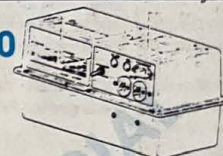
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office information, see Page 94.

## FEATURES

<b>Does Anybody Really Know What Day It Is?</b> /Dr. Michael W. Ecker .....	8
Leap years, day from date, and a cursory glance at Boolean algebra .....	16
<b>Database Manager</b> /John M. Leshner .....	24
A program to organize all the information you've gathered .....	30
<b>Mastering MS-DOS</b> /Danny Humphress .....	46
Delving further and further into EDLIN .....	56
<b>Taking Stock In The Market</b> /Randolph Mateer .....	88
A program that just <i>might</i> triple your extra money .....	94
<b>BASIC Training</b> /Fred Blechman .....	100
More procedures for text formatting .....	106
<b>Sketch-It Version 2 — Expanding The Window</b> /Dan Webber .....	112
A graphics editor that will amaze and astound .....	118
<b>Sanyo's MBC-775 Portable — The Newest Member Of the Family</b> /Charlotte and Brian Stone .....	124
An introductory look at Sanyo's new MS-DOS machine .....	130

## DEPARTMENTS

<b>Advertisers Index</b> .....	94
<b>Business Sector</b> .....	20
Solutions to your applications problems .....	54
<b>Corrections</b> .....	14
<b>Helpful Hints</b> .....	86
<b>Input/Output</b> /Tim Purves .....	6
Answers to your technical questions .....	93
<b>Letters To The Editor</b> .....	84
<b>Racksellers</b> .....	82
<b>Reader Survey</b> .....	73
<b>Soft Talk</b> .....	94
New products and services .....	77
<b>Submitting Material</b> .....	76
<b>Subscription Information</b> .....	79

## REVIEWS

<b>Character Generator</b> .....	77
<b>CPeMulator</b> .....	76
<b>Mi-Key</b> .....	79
<b>Postmaster II</b> .....	80
<b>Sanyo Direct Transfer</b> .....	78
<b>TLS</b> .....	75

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Your computer is fantastically fast...once it knows what to do. You probably realize that a computer is the combination of hardware and software, working together smoothly, to give you what you want. Either one alone is useless. Software is really the key...the "mind" of a computer system. Every project or task you want to do requires a new specific software application to make your computer behave exactly the way you desire.

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# LETTERS TO THE EDITOR

PAR  
AVION

## SOMETHING FISHY IN MASSACHUSETTS

Editor:

I made the mistake of sending \$15 to join one of the Sanyo user groups publicized in your magazine (September, '84, Page 39) — specifically, the Massachusetts group run by one Jim Hornig-Rohan, who seems to have skipped the country with my money. I have received nothing for my money, not even an acknowledgement from Mr. Hornig-Rohan that my two letters of inquiry have been received. My bank did return my cashed check, but I would like to get my money back, since Mr. Hornig-Rohan has offered nothing in return.

I trust that you will stop advertising what appears to be a mail-order fraud and will warn your readers not to deal with that person.

Aside from that experience, I find that your magazine does a good job of providing a much-needed channel of communication, although I do wish that you would make more of an effort to deliver information directly from Sanyo about their product, the MBC-550/555.

William Dzombak  
Latrobe, PA

**Editor's Note:** Mr. Hornig-Rohan was given an opportunity to respond to this letter and we have yet to receive an answer. Further, upon trying to contact him by phone, we finally reached a Mr. Rohan in Cambridge, Mass., who has no contact with the group but who said that he had received several related complaints from irate callers. So, readers, be advised of the present state of the situation. We intend to strike the Sanyo Users Group/USA from our listing.

To paraphrase several public service

ads, if you suspect mail fraud, contact the Postal Service. If Mr. Jim Hornig-Rohan or any other members of the group (if indeed there are any?) would like to contact us to clear this matter up, they are invited to do so.

See the following related letter.

Editor:

I am not sure why I am doing this. Perhaps I am just sick to death of hearing people contact us at the Sanyo National Users Group (S.N.U.G.) and complaining that they have been taken by a particular individual claiming to operate a national users group. It has happened six times in a week. This individual cashes their checks and that is the last they hear from him. He cashed my check back in February. It is a blot on the record of all honest groups.

Here is my offer to you people: If you have sent money to someone who promised to operate a national users group, and who gave you nothing in return, send your canceled check to S.N.U.G., P.O. Box 3445, Moscow, ID 83843. We will put you on the mailing list for our newsletter and make you a full member until one full year after the date the check was cashed. Let me make this clear — if you have been defrauded, we want no money from you. Rescuing failing publications has a long tradition in the magazine industry and, if we want the name SNUG, we ought to earn it. We can probably supply everything you were promised. Thank you for owning a Sanyo.

Michael Russell, Ph.D.  
President

Sanyo National Users Group

**Editor's Note:** Mr. Russell, you and the Sanyo National Users Group deserve to be highly commended for taking this stand. You and others like you exemplify the type of people that we like to think make up the Sanyo

community of users. We at SOFT SECTOR salute you and your efforts.

## PATCHING THE STARS

Editor:

In regard to one of the letters in the last issue of SOFT SECTOR (November, '84, Page 7), it is possible to run MicroPro's *CorrectStar* on the MBC-550 computer if you are using the MS-DOS 2.11 operating system.

One of the files must be patched using *DEBUG* before *CorrectStar* can be used. You must patch one byte in *CORRSTAR.OVR* using the following instructions:

At the system prompt enter  
DEBUG CORRSTAR.OVR  
At the *DEBUG* prompt enter  
E3C0 and press ENTER  
At the next prompt enter  
90 and press ENTER  
At the next prompt enter  
W and press ENTER  
Leave *DEBUG* by typing  
Q and press ENTER

This version of *CorrectStar* will run on the MBC-555-2. There will be a problem however. After you are finished using the spelling checker and return to *WordStar*, there will be some words in inverse video left on the screen. This will not disappear until you do some paging and scrolling through the document. MicroPro has indicated that there is no easy fix to this, but it is a small problem compared to the convenience of having an excellent spelling checker like *CorrectStar*.

Mark Zeiger  
Sanyo Business Systems  
Computer Division

Editor:

I find that I use my Sanyo predominately to run *WordStar* and am interested in anything that simplifies or speeds things up.

Continued on Page 72.





 **SANYO** said:

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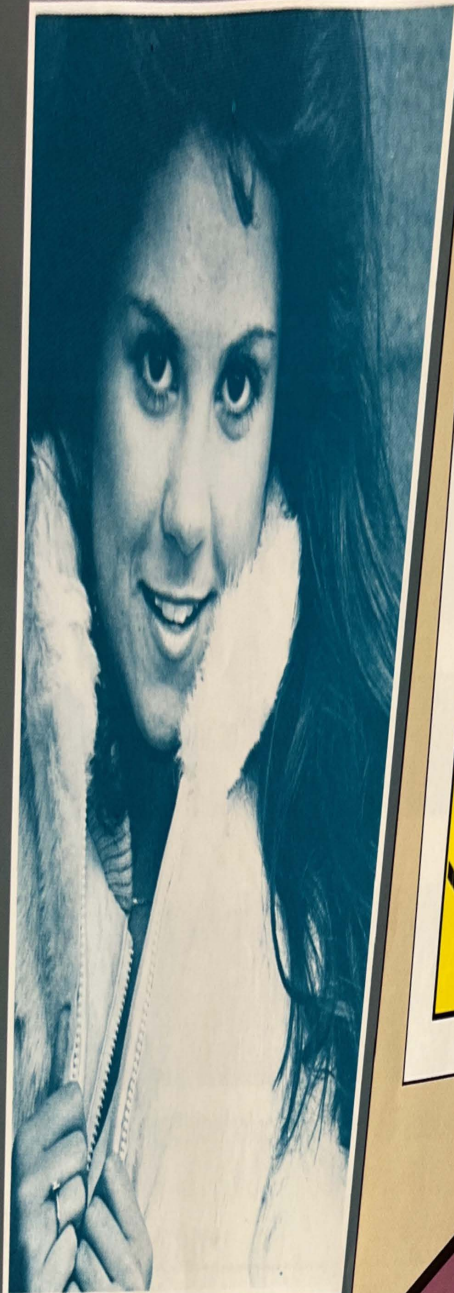
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9	10	11	12	13		
16	17	18	19	20		
23	24	25	26			

SEPTEMBER 1988

S	M	T	W	T	F	S
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	



PHOTOS BY NEAL C. LAURON





JUNE 1992

S	7	14	21	28	
F	6	13	20	27	
T	5	12	19	26	
W	4	11	18	25	
T	3	10	17	24	
M	2	9	16	23	30
S	1	8	15	22	29

# Does Anybody Really Know What Day It Is?

By Dr. Michael W. Ecker  
Soft Sector Contributing Editor

**A**lthough the paraphrase contained in the title comes from music ("Does Anybody Really Know What Time It Is?" — *Chicago*, 1970), the question is an intriguing one since it is surprising to some people, upon first reflection, that it is possible to get the day of the week from knowledge of the date alone. While there are several variations, the name most frequently identified for the method is Zeller's formula. One of the Canadian readers of my column "Recreational Computing" in *Popular Computing*, Mr. Gunther Mayerlen, sent most of the information needed for the version which I provide here.

We also will be interested in a different question; namely, the one of determining whether a given year was or will be a leap year. We start with that. But first, a review.

## Look Before You Leap

**A**s you know, each year has 365 days. In point of fact, the period of revolution of the earth about the sun is equivalent to almost  $365\frac{1}{4}$  days. Hence, every fourth year there is approximately one extra day: thus, leap year.

Now, you will notice that I said "almost" in the previous paragraph when I referred to the number of days in one revolution of the earth about the sun. It really is just a smidgen less. Know what that means? That's right! Our leap year correction needs more correcting!

So, every hundred years — a century year such as 1900 — even though the year number is a multiple of four and would have otherwise been a leap year, that year is *not* a leap year.

Hence 1700, 1800 and 1900 were not leap years.

What about the year 2000? Does this mean that it won't be a leap year then? Well, guess what! It turns out that this last correction once again swings the pendulum (if you'll pardon the expression) too much the other way once more. So, one last rule which ought to hold us for at least a millenium (thousand years) or so: If the year number is a multiple of 400, it once again is a leap year after all.

Before peeking, you might try writing a small program to allow you to input any year and have the computer determine whether or not it is a leap year. Then compare it to the one shown.



**LISTING 1: LEAP YEAR**

```

10 CLS
20 PRINT "INPUT THE YEAR AND I WILL TELL YOU WHETHER OR NOT IT'S A LEAP YEAR."
30 FOR DELAY=1 TO 1000: NEXT DELAY
40 PRINT: INPUT "YEAR"; Y
50 IF Y/4=INT(Y/4) THEN PRINT "THE YEAR IS A MULTIPLE OF 4, SO MAYBE.":GOTO 70
60 PRINT "NO, NOT A LEAP YEAR.": PRINT: PRINT: GOTO 20
70 IF Y/100=INT(Y/100) THEN PRINT "THE YEAR IS ALSO A MULTIPLE OF 100, SO MAYBE
NOT THEN.": GOTO 90
80 PRINT "YES, IT IS A LEAP YEAR.": PRINT: PRINT: GOTO 20
90 IF Y/400=INT(Y/400) THEN PRINT "AHA, IT IS A MULTIPLE OF 400, HENCE A LEAP YE
AR!": PRINT: PRINT: GOTO 20
100 GOTO 60

```

Now back to Zeller's formula and getting the day of the week from the date. Here, I will take the date to be only for the last few centuries: one source listed Zeller's formula or a variant as being valid after 1753. I do not know for sure how far into the future it holds, but it is probably safe to assume it will provide the correct answer for at least the next few centuries.

However, before getting right into the program, I would like you to notice — as you can see from our discussion of the leap year question alone — that the subject of dates is a very iffy one. Because of this, this topic is a traditional one in BASIC programming where Boolean variables are introduced. George Boole was a 19th century mathematician who developed the algebra of logic. As such, the term "Boolean" is considered synonymous with the topic of logic.

To get a quick understanding, fire up your computer and load BASIC. From the BASIC Ready prompt, type in these lines exactly as shown:

```

PRINT (1=0)
PRINT (1=1)

```

Of course, the first is false and the second is true. Your Sanyo 550/555 computer should print out the number 0 for the first line, and -1 for the second one. (Depending on your machine, if you have another computer besides your Sanyo, you could get either a -1 or 1 for the second line.) Accordingly, you learn one thing about your machine's BASIC: 0 represents false and -1 (or 1 for a few other machines) represents true.

Do not confuse the above *PRINT* statements with, for example, *PRINT "1 = 0"* which would be the printing of a string, the expression  $1 = 0$ , exactly as written inside the quotes.

To play around a bit, suppose you wanted to set 'T' equal to 1 if  $X=100$ , and 0 otherwise, and then print out the result. You could write this in BASIC:

```

10 IF X=100 THEN T=1 ELSE T=0
20 PRINT T

```

But you could also do it this way:

**LISTING 2: BOOLEAN LEAP YEAR**

```

10 CLS
20 INPUT "TELL ME YEAR AND I'LL TELL WHETHER OR NOT IT'S A LEAP YEAR"; Y
30 T = (Y/4=INT(Y/4)) AND (NOT (Y/100=INT(Y/100)) OR (Y/400=INT(Y/400)))
40 IF T THEN PRINT "LEAP YEAR" ELSE PRINT "NOT A LEAP YEAR"
50 PRINT: PRINT: GOTO 20

```

```
10 T = -(X=100): PRINT T
```

Since your machine uses -1 for true, upon reaching  $X = 100$  in Line 10, the computer assigns -1. Then  $T = -(X=100) = -(-1)$ , or just 1. If the Sanyo had used 1, we would not have needed the negative in front of the parentheses. For those of you with other machines which do use 1, you should note that you can cover both cases (-1 or 1 for true) by using  $T = (X=100)*(X=100)$  in Line 10, as the square of either -1 or 1 is 1.

With this in mind, clever use of Boolean variables can cover a lot of conditional situations. Let's quickly cover the Boolean/logical connectives first. They are *AND*, *OR*, *IF . . . THEN* and *NOT*. They are defined analogously to their everyday usage. Using 'F' for the false value and 'T' for the true one:

**AND**

T and T = T, T and F = F, F and T = F, F and F = F.

**OR**

T or T = T, T or F = T, F or T = T, F or F = F.

**IF . . . THEN . . .**

If T Then T, is T; If T Then F, is F; If F Then T, is T; If F then F, is F. Note that a false premise (the "if" part) being false automatically implies the conclusion, by which I mean that a conditional statement with a false premise is automatically considered true. (People express this at the gut level without being aware of it: "Oh yeah! Well, if you ran the mile in under four minutes, then I'm Superman." The speaker is expressing his belief that the premise is false.)

**NOT**

Not T is F, Not F is T.

With all this under our belt, we can go on and write a program using Boolean variables to duplicate what our leap year one did. Try it and then compare it to the one here. Do you get the same answers for these inputs shown in the sample output display?





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Finally, let's get into our original question, the day from date program. The formula involved is a bit esoteric looking, but you might enjoy at least noting the use of Boolean variables, even if the formula is as unclear to you as it is to most people! In any case, it is a fun and useful program, one which you can use over and over. Moreover, I have rewritten it so that it will work on both Sanyos and non-Sanyos. (The original version used 1 for true on a Sharp PC 5000 and so had to be modified.)

Enjoy!

#### LISTING 3: DAY FROM DATE

```

10 CLS
20 PRINT: PRINT "DAY FROM DATE PROGRAM"
30 FOR DELAY=1 TO 1500: NEXT:
40 PRINT: PRINT "THIS PROGRAM WILL ALLOW YOU TO INPUT A DATE AND TELL YOU ON WHI
CH DAY IT FALLS."
50 T=(1=1): REM TEST TO SEE WHICH VALUE IS USED FOR TRUE ON COMPUTER
60 FOR DELAY=1 TO 1000: NEXT
70 PRINT: INPUT "FIRST TWO DIGITS OF THE YEAR (19 IF THIS CENTURY) = "; C
80 INPUT "SECOND TWO DIGITS OF THE YEAR = "; Y
90 INPUT "MONTH (NUMBER FROM 1 TO 12) = "; M
100 INPUT "DAY = "; D
110 Z=INT(2.6*(M-2+T*12*(M<3))-.199)+D+Y-T*(M<3)+INT((Y-T*(M<3))/4)+INT(C/4)-2*C
120 PRINT: PRINT "THAT DATE IS ";
130 PRINT MID$("SUNMONTUEWEDTHUFRISAT",1+3*(Z-7*INT(Z/7)),3)
140 FOR DELAY=1 TO 500: NEXT: PRINT
150 PRINT: INPUT "<RETURN> TO DO MORE; OR TYPE S THEN <RETURN> TO STOP"; X$
160 IF X$="S" THEN END
170 PRINT: PRINT: GOTO 70

```



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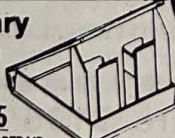


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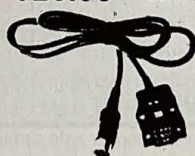
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# Revealing *WordStar's* Secrets



**H**ere are a few little tricks I have picked up using *WordStar* that are far too trivial to write an article around, but are probably unknown to many programmers and users. I would like to pass them along. . . .

- You're in *WordStar* and the compiler told you the error was on Line 652. How do you get there without paging or searching for some string? No problem. From the top of the file, type:

^Qf

When *WordStar* displays "Find?," type:

^n ENTER

When *WordStar* displays "Options?," type

651 ENTER

*WordStar* will stop at the beginning of Line 652.

- Have you ever wanted to print a part of a file you're editing *without* returning to *WordStar's* top menu? The documentation will tell you it can't be done. They like to keep secrets.

All you have to do is mark off the section you want to print (PF7 and PF8) and type:

^Kw (Used to write a file.)

*WordStar* will ask you for a filename. You respond with PRN. This is the MS-DOS device name for the printer. You will see the message:

FILE PRN EXISTS — OVERWRITE? (Y/N)

Answer 'Y'es and your printer will spring to life producing

hardcopy of the block you marked. The only catch I've found with this technique is that some printers won't expand tab characters.

- Sometimes it would be handy to have more than one block "marked" at the same time. *WordStar* will only allow one, but you can fool it into marking any number of blocks simultaneously. It works like this. Mark a block normally and type:

^Kw

Give it a filename such as *B1*.

Repeat this process for as many blocks as you want, making sure to give each a unique filename (i.e. *B1*, *B2*, *B3*).

Once they're all marked, you can insert them wherever you like. Just move to the place in your text where you want to insert one of these blocks and type:

^Kr

You'll be asked for a filename. Type in the name of the block you want and *WordStar* will fetch it for you from the disk and insert it into your text.

Note: I use the naming convention *Bn* because it makes disk clean-up simple. When I have returned to DOS, I can delete all the blocks by issuing the MS-DOS command:

DEL B?

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# DATABASE M-A-N-A-G-E-R

---

BY JOHN M. LESHER

---

**T**he *Database Manager* program was written to fulfill a need for some way to store information in an organized fashion. This program allows the user to store data sequentially on the disk and use only as much space as is needed. That is to say, if you had defined a file with 100 records maximum but had only used 10, the system only stores the 10 records with data in them — not all 100 records.

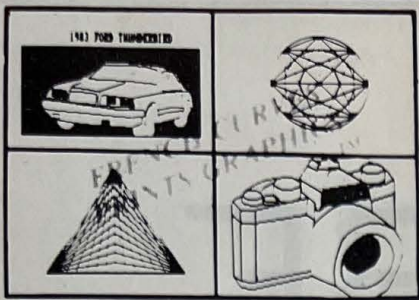
The main screen of the *Database Manager* program will erase itself after approximately 20 seconds. If, after that time, you wish to use the program, any key will bring the display back for another 20 seconds. This feature will help to keep from burning the main display on the CRT if the program were to be left running for an extended period of time. If you prefer the display to remain on the screen for a longer period of time, you can increase the 200 in Line 200 of the program listing.

In addition to putting the program on your disk, you may want the system to come up running from power up. This can be accomplished by first formatting a blank disk with systems contained. Once that is done, copy the *BASIC.EXE* file from your system disk. All that is left to do is to write the *AUTOEXEC.BAT* file shown

---

(John Leshar is an engineer working for a corporation which manufactures instrumentation and chemical reagents used for the electronic analysis of blood chemistries in hospitals and commercial laboratories. He can be contacted at P.O. Box 68462, Indianapolis, IN 46268.)





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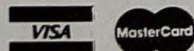
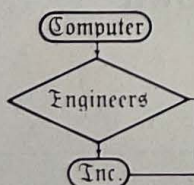
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below and copy the *Database Manager* program onto the disk.

### BASIC "DATABASE"

The *Database Manager* program stores data on the disk with the extension .DAT. Therefore, when the "List" option is selected from the main display, only those files with that extension will be displayed.

Although this program was generated on a system containing 256K, two disk drives and MS-DOS Ver. 1.25, it will function with a minimum of 128K, one disk drive and under either MS-DOS 1.25 or 2.11.

For those users who only have one drive, Line 40 of the program should read as follows:

```
40 DISK$="A:":ALTDISK$="B:":
   FAULT$="Program Error"
```

This will make the program default to drive A: instead of B:. All references to *ALTDISK* could be omitted for single drive users; however, I would recommend leaving these in should you decide to upgrade to a dual drive system at a later date.

By utilizing the subroutine beginning at Line 3620, this program will allow the usage of both upper- and lowercase letters. I found it simpler to use this routine than to ask for both upper- and lowercase comparisons when the user enters a response to a query.

The *Database Manager* program was written so that it will function on both the Sanyo 550/555 and the IBM PC. I wanted to make this program portable between the two computers, so I have refrained from using commands that work only in one BASIC or the other.

### Main Display Options

#### <A>ccess an existing data file

By entering an 'A', the user may gain access to current data files. The user will be asked to enter the name of the file to be loaded. After the RETURN key is depressed, the disk will be accessed and the screen will display how many records have been used out of the maximum possible. The user will then be asked if he would like to change the maximum number of possible records. If 'N' is entered, the disk will again be accessed to finish loading the data file and the data file manipulation screen will be displayed. If 'Y' is entered, the user will be asked to enter the new maximum record number and the

system will finish loading in the data file and continue on to the data file manipulation screen. If the file is not saved at the end of the manipulation session, the maximum number of possible records will not be changed to the new value.

#### <C>reate a new data file

By entering a 'C', the user may create a new data file. The program will then ask for the following information:

- 1) New data file name
- 2) Maximum number of records
- 3) Number of fields per record
- 4) The name of each field

Finally, the program will display all of the information about the new file and ask the user to verify by entering 'Y'. If the user enters 'N', the program returns to the main display. When 'Y' is entered, the program continues to the data file manipulation screen.

#### <D>elete a data file

By entering a 'D', the user may delete an existing data file. The user will be asked to enter the name of the file to be deleted. The program will then display the following information.

File Name — Data filename is displayed here  
Logged Drive — The disk to be accessed is displayed here  
Are You Sure [Y/N]

Enter 'N' to return to the main display and 'Y' to delete the file.

#### <E>xit to operating system

By entering an 'E', the program will exit to the operating system.

#### <L>ist existing data files

By entering an 'L', the program will list the existing data files from the logged disk drive. The default is set to read from B:.

#### <R>ead and write from A: instead of B:

By entering an 'R', the user may change the drive that will be read from and written to. When 'R' is entered, the display will change to "<R>ead and write from B: instead of A:." If 'R' is entered again, the screen will return to the display shown above.

#### <S>et time and date

By entering an 'S', the user may



change the date and/or the time. The following screen will be displayed:

<D>ate Set  
<E>xit to Main Display  
<T>ime Set

By entering the desired code, the user may set the date and/or time or return to the main display.

## Data File Manipulation Options

### 1 Input Data

By entering a '1', the user may enter new data into an existing file or begin entering data into a new file. The program will start at the first empty record and will continue to allow the user to enter new data until the word **STOP** is entered into one of the fields. The record that stop was entered in will not be stored in memory.

### 2 Scan Field

By entering a '2', the user may scan the records of the file being manipulated. By using the asterisk key (\*) during the scan process, the user may end the scan option. The scan option will always begin at the first record.

### 3 Delete Records

By entering a '3', the user may delete an existing file from the disk. The program will first ask if the record number is known. If the record number is not known, the user may scan the file to determine which record is to be deleted. When a record is deleted, all records after the one deleted will decrement one record number. For example, if record 10 were deleted, record 11 would become 10, record 12 would become 11 and so on to the end of the file.

### 4 Sort File

By entering a '4', the user may sort a file. The file may be sorted on one or two fields. The first field selected takes priority over the second field. If two records have the same data in the first field, the program will sort those two records, first by the first field and then by the second field.

### 5 Save File

By entering a '5', the user may save a file to the disk. The program will display the name of the file and the default disk drive. The user will be asked if any changes are desired. The user may change the name and/or the

default disk drive at this time. If no changes are desired, the user must enter 'N' to save the file to the disk.

### 6 Word Search

By entering a '6', the user may search for a word or a phrase. The case selection must be exact. That is to say a search for the word **DATA** will not find the word **Data**. The program will display all matches to the word or phrase entered. The matches will be displayed in inverse video until all matches have been found.

### 7 Modify Record

By entering a '7', the user may modify an existing field within the selected record. As was the case for the deletion of a record, the user must know the record number to be modified. When the number of the record to be modified is entered, the program will display each field one at a time. If no change is to be made to the field depress the RETURN key to continue to the next field. To make a change, enter the new data for that field followed by a RETURN.

### 8 Print a File

By entering an '8', the user may print the current file. The user will then be asked the following questions:

Input desired printout title

The user may at this time enter a title that will be printed at the top of every page.

Do you want record numbers printed [Y/N]

The user may select whether or not the file record numbers will or will not be printed prior to each record.

Do you want field titles printed [Y/N]

The user may select whether or not the field titles will be printed with each field.

After the above questions have been answered, the user will then be asked to ensure that the printer is ready. Once the RETURN key is depressed the file will begin outputting data to the printer.

### 9 Return to Main Display

By entering a '9' the program will return to the main display. The data that has been manipulated during this session will not be saved by the system unless the "Save File" option has been used prior to this option.

*Listing begins on Page 36.*

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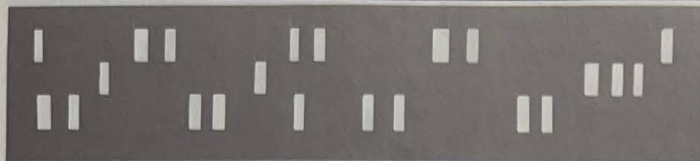
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## BUSINESS SECTOR

CHARLOTTE & BRIAN STONE

Soft Sector Contributing Editors

**Q.** How can I use WSCOLOR.BAS to add color to the other programs in the "Star" package?

Daniel A. Prosser  
Normal, IL

**A.** There are no provisions at the present time to allow the other "Star" products to function in color as does *WordStar*. It seems that MicroPro felt that these other programs would be confusing due to their screen formats, which are not as consistent as *WordStar*.

If at anytime in the future this changes, I am sure you will be made aware of it in *SOFT SECTOR*, and also, how you can go about changing your existing product to take advantage of color.

**Q.** Originally, my Sanyo PR-5500 printer would print bi-directionally and also do boldface printing. Somehow, during my learning process, I turned both of these features

(The authors, Charlotte and Brian Stone, have been involved with computers since their purchase of the original Radio Shack Model I in July of 1978. Since April, 1984, Charlotte has been using the Sanyo in her daily work routine as office manager for a Detroit firm. Brian has been using a variety of Sanyos since May of 1983. Of the five computer systems they presently own, two are Sanyos.)

off. I have tried everything, but I cannot get them back on. What am I doing wrong?

Gordon S. Taylor  
San Bernardino, CA

**A.** From what is in your letter, the best I can do is speculate as to what your problems are. First, did you install the printer with *INSTALL* as shown in the first issue of *SOFT SECTOR*? The Sanyo PR-5500 printer should be installed as a Diablo 1610-type printer.

Second, the Sanyo PR-5500 printer will only print bi-directionally with *WordStar*. If you do not get bi-directional printing at any other time, this is normal. You should *not* use "BP" because the printer will always print bi-directionally with *WordStar*. No special commands are necessary if *WordStar* has been installed correctly.

To get bold print, you must hold down the CONTROL key, then press the 'P' and then the 'B' keys. Your screen should look like this: ^BBold Print^B. There is no way to turn off the bold function all of the time unintentionally.

**Q.** I have been told by several people that files from *WordStar* and *CalcStar* can be merged. However, none of them knew how it was accomplished. Any help from you will be appreciated.

Daniel W. Sheppard  
Palm Harbor, FL

**A.** A *CalcStar* file in its normal configuration can't be handled by *WordStar*. First, you must write the file to your disk, not by simply saving the file in *CalcStar*, but by using the print command (;P) to send the file to a disk instead of your printer. The program responds to your ";P" command with the prompt:

To which file? PRINTER:

Instead of pressing RETURN to enter the default (PRINTER:), type a name for the file and then press RETURN. This will send the output to a disk file with an automatic filename extension .TXT. You will still need

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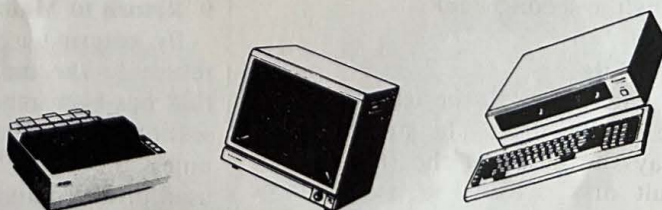
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to define some options: the beginning and ending cells of the report, the print width and the titles. Careful selection of the beginning and ending cells will enable you to print or write to disk a portion of your spreadsheet rather than the whole thing.

The resulting .TXT file can be read into a *WordStar* file using the ^KR command. It can also be edited or enhanced with *WordStar*'s print commands.

**Q.** *Is there a limit to the number of files you can have on a disk with WordStar?*

Dix Bruce  
Oakland, CA

**A.** *WordStar* has no control over how many files can be on the disk; this is a function of the operating system software which, in this case, is MS-DOS. MS-DOS Version 1.25 will allow a maximum of 64 files on single-sided disks and 112 files on double-sided, nine-sector disks. MS-DOS Version 2.11 will allow over 700 files if you have the storage capacity (i.e., a hard disk drive).

**Q.** *My Juki 6100 printer will print proportional spacing from BASIC just fine but it will not do proportional spacing with WordStar. I wrote to MicroPro and they told me WordStar does not support proportional spacing, which I feel begs the question. How can I keep WordStar from turning off the proportional feature after I turn it on from BASIC? There must be some simple control statement in WordStar which works this unwanted mischief.*

Alan Lipschitz, M.D.  
New York, NY

**A.** I am sorry to have to inform you that MicroPro is correct and *WordStar* does not support proportional spacing. This may seem hard to understand since your printer does support it. *WordStar* has a function called microjustification, which simulates proportional spacing,

but is not compatible with it.

Microjustification inserts incremental spaces between words to give a close approximation to proportional spacing, and it is this feature which will not work with proportional spacing. You could install *WordStar* to send the code to your printer as outlined in my first two articles in *SOFT SECTOR*, but I am sure you will not be pleased with the results. To have proportional spacing function correctly, the software *must* support it and *WordStar* does not. If you feel you must try, follow the instructions in the first article and use one of the "User Defined Function" areas and insert the control code before any text is typed, but after the dot commands, if any are used.

[Editor's Note: There is a separate program on the market named *ProportionalStar*, by Writing Consultants, that will install proportional spacing in *WordStar* on a daisy wheel printer. *ProportionalStar* was reviewed in the December issue, Page 59.]

**Q.** *I have a Gemini-10X printer and I am having two problems since installing it per your article. First, the printer is always in double-strike, or emphasize mode, and the right margin is always reformed without giving these instructions. Second, there is always a number '1' at the top of the next page when printing a letter. This last condition was there before I installed WordStar.*

C.C. McClintock  
Greensboro, NC

**A.** Let's take the problems you are having one at a time. First, please go back through the installation sequence and make sure that you have installed all of the instructions as detailed in the article. If you have, please send me a copy of your owner's manual covering all of the control sequences and tables and I will try to see what is wrong. Possibly, your printer is newer than the information furnished in the original article. The reformed margins are a result of the ^OJ justify margin command that you must turn off if you want to have ragged right margins in your

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letters. Since *WordStar* is a sophisticated word processor, this is one of the defaults because most people prefer the smooth look to their letters.

Now, if you will reread the section of the manual on page numbering, you will find that *WordStar* always numbers the pages and this must be turned off if unwanted. The command to do this is ".op" and it means omit page number. This is a "dot command" and its uses, as well as all of the other dot commands, are covered in the manual. The reason your page number is at the top of the next page is because of where you have positioned the paper in the printer. If you wanted this much top margin, there is a dot command for this also.

Of course, if you wish to turn off *WordStar's* page numbering feature entirely — which you may wish to do if letter writing is your primary use — you can do this by running the *INSTALL* program and turning the "omit page number" toggle to on.

**Q.** *I have a Sanyo PR-5000 printer and it will not make use of a number of WordStar's functions as shown by PRINT.TST. What printer of comparable cost will? Also, the printer won't make a ditto worth a darn, even with double strike.*

Connie Mack Rea  
California, PA

**A.** The SanyoPR-5000 printer emulates a Diablo/Xerox 1610/1620, which is one of the choices available in the *WordStar* installation menu. If you install the printer in this fashion rather than as an IBM printer, as *WordStar* is installed when you received it, you will get all of the *WordStar* functions.

After reinstalling *WordStar*, please run *PRINT.TST* and see what happens. There is no need to replace the printer.

As for making a ditto on the printer, you do not specify what your problem is so I don't know how to answer your question. If the printer is not hitting the ditto hard enough, you might try setting the printer as if you were using one piece of paper (see your manual). Or you might try inserting

a second sheet of paper under the ditto so that you get a harder impression from the printer.

**Q.** *How do you use SpellStar with an MBC-555 with dual, single-sided disk drives? There is not enough disk space to get all of the files on two diskettes.*

Robert Seljan  
Cleveland Heights, OH

**A.** To run *SpellStar* on dual, single-sided drives, you need three diskettes configured as follows:

Disk one must contain these files:

- 1) *WS.COM*
- 2) *WSMSG.S.OVR*
- 3) *WSOVLYI.OVR*
- 4) *SPELSTAR.OVR*

Disk two must contain the text you wish to check and disk three must contain the file *SPELSTAR.DCT*.

Put disk one into drive A: and disk two into drive B:. Enter *WordStar* and change the logged disk drive to B: by using the 'L' command in the opening menu.

Press 'S' to begin *SpellStar*. You will be asked which file is to be checked for spelling. Enter the filename and press RETURN. The *SpellStar* menu will now appear — read it carefully. At this time, remove disk one from the A: drive and insert disk three (the one with *SPELSTAR.DCT* on it). You will be prompted to do this by *SpellStar*. Then press 'C' to check the spelling. A new menu will appear; at this time the logged disk drive must be changed to the A: drive. Press 'W' and you will be asked for the new working drive. Type 'A' and the menu will respond with this change.

At this point you can begin checking your spelling by pressing RETURN. Follow the directions for *SpellStar* in the *WordStar* training guide.

After the errors have been flagged in your document, remove disk three from drive A: and reinsert disk one into that drive. Press RETURN and follow the screen messages. Also, refer to the *SpellStar* section of the *WordStar* training guide to continue with the error corrections.



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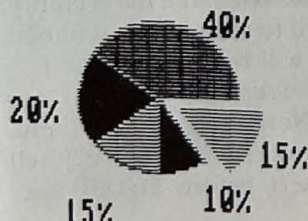
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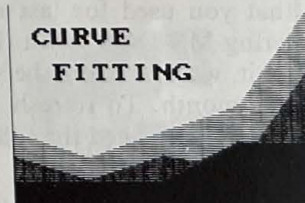


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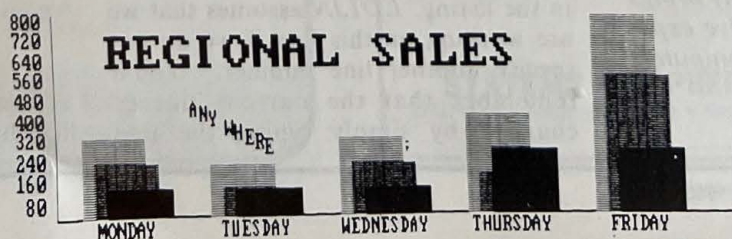
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# Further And Further Into EDLIN

DANNY HUMPHRESS  
Soft Sector Technical Editor

**V**iewed topically, the jungle we call MS-DOS appears to be a single living entity. Upon closer examination, it is revealed to be an entire galaxy of nebulae, quasars and solar systems; each solar system being another complex world of planets, asteroids, and moons.

*EDLIN*, the MS-DOS line editor that we've been exploring these past two months, is such a solar system in the MS-DOS galaxy. Its special commands and keystrokes make it a unique being that enhances the usefulness of the operating system. It was not by circumstance that Microsoft included it in MS-DOS. Rather, it is an integral part of the day-to-day operation of the computer system. Many MS-DOS commands and features, which lie in the solar systems soon to be explored, rely upon files that must be created with a file editor such as *EDLIN*.

To date, we've used *EDLIN* to create some small files and edit those files with special editing keys and a subset of *EDLIN* commands. On this, the third day of our *EDLIN* explorations, we'll take a look at some of the more advanced commands.

You'll need your usual set of tools: a copy of your MS-DOS 2.11 disk (which should have the *EDLIN.COM* program on it) and, of course, your Sanyo 550/555. If you have the disk that you used for last month's "Mastering MS-DOS" with the *CITIES* file on it, we'll be using the same file again this month. To refresh your memory, the file contained the following lines:

- 1: Atlanta, GA
- 2: Chicago, IL
- 3: Denver, CO

*(Danny Humphress, SOFT SECTOR's Technical Editor, is the owner of a computer software and consulting firm in Louisville, Ky. Danny brings to SOFT SECTOR his extensive experience with small business computers and applications software.)*

- 4: Los Angeles, CA
- 5: Louisville, KY
- 6: Miami, FL
- 7: New York, NY
- 8: Orlando, FL
- 9: Palo Alto, CA
- 10: San Francisco, CA

### Baker's Dozen

*EDLIN* gives you extensive control over the contents of a data file through the use of its 13 single-letter commands. We've already learned about listing with 'L' and page listing with 'P' as well as using 'E' to end the editing session.

### Parameters

Two *EDLIN* commands, 'E' (End) and 'Q' (Quit), are complete and require no other information to do their jobs. The others all require that you specify or "imply" parameters such as line numbers, search and replace strings, and counts. The format for specifying these parameters is similar on all the commands, so once you get accustomed to using *EDLIN*, they will come naturally. As a general rule, line numbers come before the command letter and all others appear after the command.

By omitting parameters on some commands, you can imply that you want *EDLIN* to use the current line and/or default values that are specific to the individual commands. As we touch on each command, this concept will become clear.

### Line Numbers

As you have noticed by now, each line in an *EDLIN* file is given a sequential "line number." It is by using these numbers that we tell *EDLIN* which lines we are editing.

There is always a current or "default" line that is marked with an asterisk (\*) in the listing. *EDLIN* assumes that we are working on this line if we do not specify another line number. You'll remember that the current line is changed by simply typing the line

number at the *EDLIN* prompt. This takes you immediately into the line editing mode where you may use *EDLIN*'s function keys to make changes in the text. Similarly, just pressing ENTER at the *EDLIN* prompt lets you edit the current line.

In addition to using numbers to specify lines, we have a few shortcuts at our disposal. The period (.) may be used with *EDLIN* commands to specify the current line which is always the last line edited. A pound/number symbol (#) is used to specify the line just past the last line of the file. Thus, if the file is 10 lines long, # would be Line 11 (bear with me here).

You can also specify line numbers relative to the current line by using plus (+) and minus (-). For instance, to indicate five lines higher than the current line, you could use "+5" instead of the actual line number; "-5" could be used to indicate the line that is five lines lower than the current line.

### Insert Lines

The 'I' *EDLIN* command allows you to insert text immediately preceding a specified line. If no line is specified and the 'I' command is used alone, text is inserted before the current line. All text, from the specified line down, is shifted down to make room for the inserted line or lines. When you finish adding lines, press CTRL-C to exit the Insert mode.

We used Insert earlier to add lines to an empty file. When the file is empty, there is no need to specify line numbers with Insert. It will begin with Line 1.

Let's add a couple of cities to our file between New York and Miami. Since New York is line 7, we'll tell *EDLIN* to insert before at this line. Type:

7I            press ENTER

The screen should look something like this:



\*71

7:\*\_

Now type the name of the first city to insert at line 6, "Charlotte, NC" and press ENTER. *EDLIN* will automatically skip to line 8 and allow you to insert text there. Type "Albuquerque, NM" and press ENTER. When *EDLIN* advances to line 9, press CTRL-C to exit the Insert mode. The screen should look something like this:

\*71

7:\*Charlotte, NC  
8:\*Albuquerque, NM  
9:\*^C

\*\_

The old text has been shifted down to make room for the two new entries. List the file to see for yourself. Type:

1L press ENTER

You'll see this:

\*1L

1: Atlanta, GA  
2: Chicago, IL  
3: Denver, CO

4: Los Angeles, CA  
5: Louisville, KY  
6: Miami, FL  
7: Charlotte, NC  
8: Albuquerque, NM  
9:\*New York, NY  
10: Orlando, FL  
11: Palo Alto, CA  
12: San Francisco, CA  
\*\_

Notice that line 9 (New York) is marked as the current line. After an insertion, the line immediately following the inserted text becomes the current line.

One of the more frequent uses of Insert is to add lines to the bottom of the text file. This is done by using "#" as the line number parameter for the 'I' command (#I). This is not necessary, as we have learned, if there are no lines in the file — just type 'I' and *EDLIN* will get the meaning just fine.

#### Delete Lines

Now that our list has grown by two cities, let's remove two other cities to get the size back down to 10. This, of course, is accomplished with the Delete (D) command.

When using Delete, you specify a range of lines that are to be removed. Any lines below the deleted lines are instantly shifted up to fill in the "empty" spaces.

There are actually two ways to delete lines. You can delete a single line by just specifying a single line number — or no number at all if you're deleting the current line, or you can delete a block of lines by specifying the beginning and ending line numbers. Again, if you omit any number, *EDLIN* will take that to mean that you're implying the current line (be careful).

We want to delete New York and Orlando from our file (lines 9 and 10). This could be done one of many ways. We could delete each individual line by typing "9D" and "10D." Another, more direct, method would be to type "9,10D" to indicate that we want to delete the range of lines from line 9 to line 10. Try this method. Type:

9,10D press ENTER

If you list the file, you'll discover that New York and Orlando are gone and Palo Alto and San Francisco have taken over lines 9 and 10:

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\*1L

- 1: Atlanta, GA
- 2: Chicago, IL
- 3: Denver, CO
- 4: Los Angeles, CA
- 5: Louisville, KY
- 6: Miami, FL
- 7: Charlotte, NC
- 8: Albuquerque, NM
- 9:\*Palo Alto, CA
- 10: San Francisco, CA

\*\_

As with Insert, the line immediately following the deleted lines becomes the new current line.

Since 9 was the current line, we could have omitted the reference to line 9 and just enter ",10D." Taking that one step further, we could have entered "+1D" where "+1" would mean "one line from the current line."

#### Search Text

One of the handiest features of *EDLIN* is its ability to quickly search through a file to find a specific string of characters such as a word, phrase, number — or anything. If our cities file were longer (and had more important information about each city than the

state it's in), Search (S) would almost instantly locate Springfield, Missouri from a list of hundreds of cities. If you want to see Springfield, Missouri and Springfield, Illinois, Search can handle that also.

Type this command:

1,#SCA      press ENTER

You told *EDLIN* to search between line 1 and the end of the file (#) and find the first line that has the string "CA" in it. Notice that there is no space between the 'S' and the search string. Everything that follows 'S' is considered to be part of the search string — including spaces. Another thing to keep in mind is that uppercase and lowercase letters are two distinct things to *EDLIN*. "CA" and "Ca" may look alike to us, but they're very different to the computer.

The screen should look something like this after you enter the above command:

\*1,#SCA  
4:\*Los Angeles, CA

\*\_

The search terminates and line 4 becomes the new current line. Type just 'S' and press ENTER. *EDLIN* will search for the next occurrence of "CA" starting with the line after the current line (which is, of course, Line 4):

9:\*Palo Alto, CA

Try typing this:

1,#?SCA      press ENTER

The only difference in this command from the one we just did is the question mark that precedes the 'S' command. A question mark (?) makes Search stop after each find and wait for you to tell it whether to stop or continue searching. This is used when you expect to find more than one line containing the string but you are looking for one specific line. It is also an easy way to see all the lines containing a search string.

After each find, *EDLIN* will stop and display the message:

O.K.?

If you press either 'Y' or ENTER, the search stops and the line becomes the

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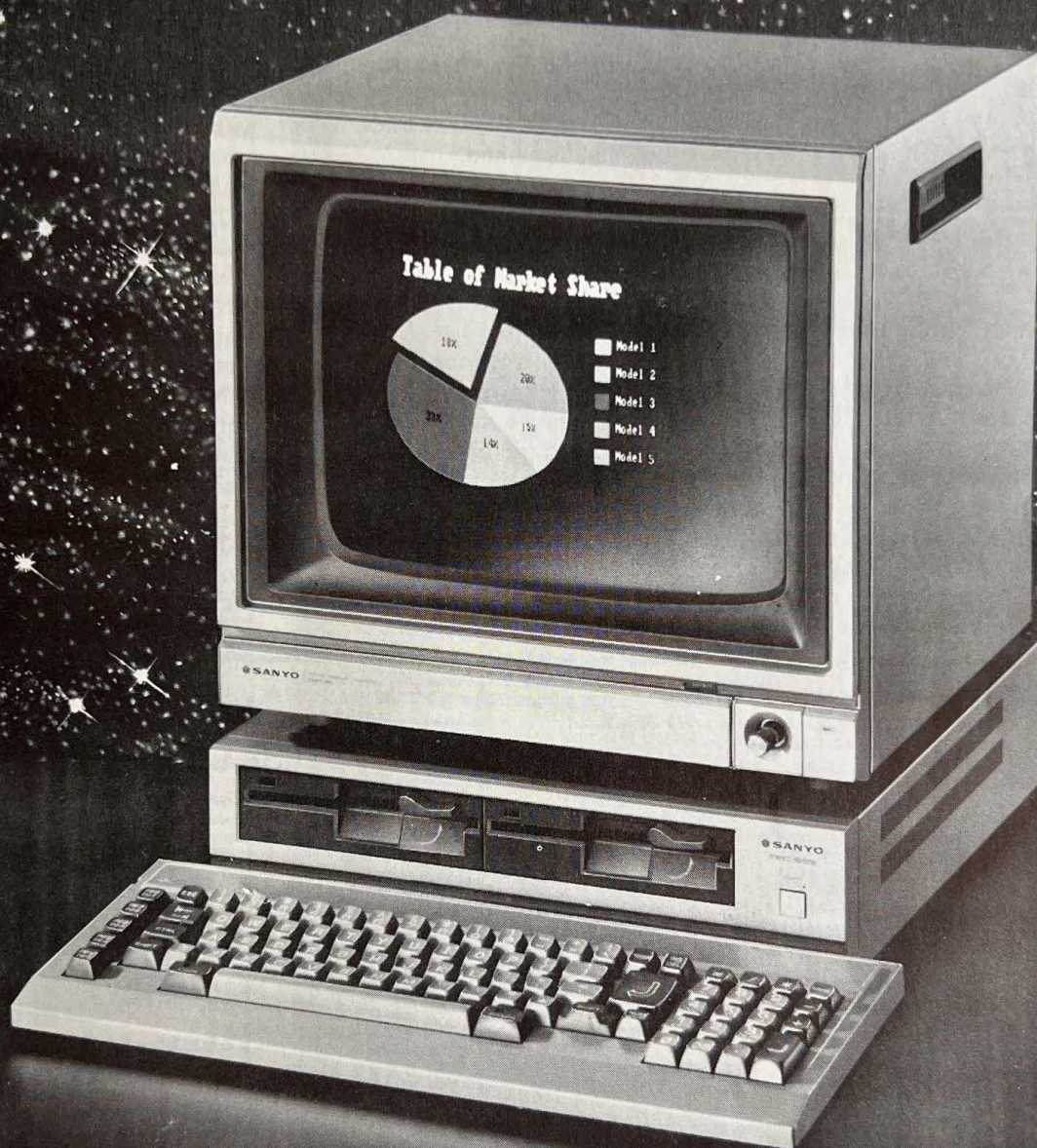
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current line. If you press any other key, the next matching line is displayed and you are again given the choice to proceed or stop. When the end of the file is reached, you'll get this message:

Not found

On the above example, press 'N' each time the "O.K.?" question appears. The screen will look like this:

```
*1,#?SCA
  4:*Los Angeles, CA
O.K.?N
  9:*Palo Alto, CA
O.K.?N
 10:*San Francisco, CA
O.K.?N
Not found
```

\*\_

If you omit the first line number in the command, *EDLIN* will assume that you want to begin searching from the line following the current line. If you omit the second number, the search will continue through the last line of the file. If you omit the search string, *EDLIN* remembers the last string specified in a command (if any) and uses it. Thus, when you typed 'S' with no other parameters, *EDLIN* started at the line

following the current line and searched through the end of the file for the search string you used earlier.

### Replace Text

Just as you can search for occurrences of a string in a file, you can also have *EDLIN* automatically find strings and replace them with another string with, you guessed it, Replace.

Replace is used much like Search except that you give it two strings — one for the search and one for the replace.

Let's take the Search example one step further and change the "CA" to "California" on all the text lines. Type the following command:

```
1,#RCA^ZCalifornia
      press ENTER
```

The "^Z" is generated by pressing CTRL-Z. This is used in *EDLIN* to indicate the end of a string of characters.

*EDLIN* will zip through the file doing its replacing. Unlike Search, it will not stop after each line, but will continue until it reaches the end of the file. The screen will look like this:

```
*1,#RCA^ZCalifornia
  4: Los Angeles, California
  9: Palo Alto, California
```

10: San Francisco, California

\*\_

Notice that only the lines containing "CA" were displayed. Had "CA" appeared more than once in a line, *EDLIN* would have repeated scanning the line until all replacements had been made. The line is displayed each time a replacement is done.

You can omit any or both of the line numbers, the same rules apply as with Search. If you omit the second string, the search strings are replaced with nothing. In other words, they are deleted.

The question mark (?) can be used with Replace to have it show you each replacement and ask for your approval (again with "O.K.?). If you press ENTER or 'Y' the replacement is made and the next matching string is located. Pressing 'N' rejects the change and leaves the line unchanged. Again, the search will continue.

### Are We There Yet?

No, not yet. I wanted to complete our discussion on *EDLIN* with this issue, but there just wasn't room. So, we'll have to wrap it up next month.

But, hey, you've worked so hard today — get outside for a bit and enjoy the brisk winter air. Prepare yourself for the *EDLIN* finale in February.



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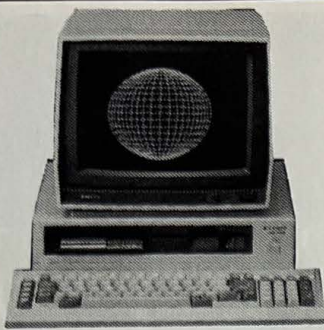
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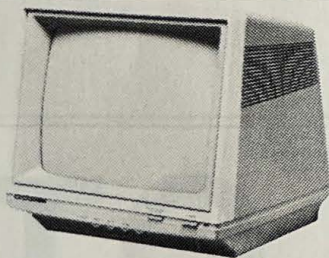
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Juki 6100 .....	\$399





### SPECIAL SALE! SANYO DMC7500 MONITORS

These are the 13" RGB models that exceed the color output of the 550's. 488 dots horizontal, by 288 dots vertical, and a list price of \$598. While they last we're including a Sanyo RGB cable and sending them out the door for a mere:

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Why? Well, for starters, your basic Silver Fox comes with 256k of RAM which acts like a disk drive so that more of your software is accessed at the speed of light rather than the speed of a mechanical drive head.

### 1.6 Megabytes

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### Free Silverware

1. MS-DOS
2. HAGEN-DOS™
3. M-DISK
4. WordStar™
5. EasyWriter
6. DataStar
7. ReportStar
8. FILEBASE
9. CalcStar
10. Color Graphics Basic
11. MailMerge
12. SpellStar
13. 25 Games, graphics and utilities

The best free software bundle in the business, and the Fox will run some programs written for the IBM-PC like dBase II and Multiplan, and programs written for Sanyo's new MBC-550 series.

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Because the Silver Fox is born on a totally automated production line in Japan it is inherently more reliable than

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The Silver Fox is built better so we can back it with a limited, one-year warranty, four times longer than IBM. We're Scottsdale Systems and since 1980 we've shipped over \$10,000,000 of microcomputer equipment directly to microcomputer users.

Because we deal directly with users, we think we have a better idea of what you want. So the Silver Fox includes graphics with twice IBM's resolution, a printer port, a keyboard with a big return key, and a 12", high-resolution monitor as standard equipment.

Of course, you could spend \$4729 at Computerland for an IBM-PC that will perform almost as well as a Silver Fox. But why bother when you can call

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and get your

**\$1398**

to perform like \$4729?

For additional information call 1 (602) 941-5856, or write Scottsdale Systems, 617 N. Scottsdale Road #B, Scottsdale, AZ 85257.

IBM PC price is based on a phone quote from the Mesa, Az Computerland on July 30, 1984. Price included 256k RAM, dual 360K drives (800K's weren't available), software, and a graphics monitor.

Trademarks: Silver Fox and Hagen-DOS, Scottsdale Systems Ltd. IBM-PC, International Business Machines Corporation, Wordstar, Calcstar, Mailmerge, Spellstar, and Infostar, Micropro International, MS-DOS, Multiplan, Microsoft Corporation, Filebase, EWDP Software, Inc. dBASE II, Ashton-Tate.

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*If you have any money left after financing your computer hobby,  
here's a program to help you put it to work*

# TAKING STOCK

**M**aking money on the stock market is not always an easy task. Brokerage houses and investment firms have staffs to analyze stocks or groups of stocks and predict what the market will do in the future. Even then, they are not right all the time.

One of the simplest methods of stock analysis is used by the National Association of Investment Clubs (NAIC). The NAIC promotes the formation of investment clubs which meet periodically to invest in stocks. The method they recommend to members is covered in their stock selection guide.

To use the guide you must have access to certain company data for the past five years. The required data, obtained from a Standard and Poor sheet, are

the sales (revenues), earnings per share, and high and low price per earnings ratios (P/E). These Standard and Poor sheets can generally be obtained from any broker or investment firm. Also needed is the current price of the stock.

By plotting historic sales and earnings on special graph paper you can determine the average yearly growth rates. These figures are used in estimating what you think the future growth of the company will be.

The heart of the selection guide is the price forecast, where the estimated high and low prices of the stock over the next five years are calculated. To do this you estimate the high and low earnings per share, based on the historic growth, and compute the average high and average low P/E ratios.

The average high (Price/Earnings) multiplied by the estimated high (Earnings/Share) equals the estimated high (Price/Share). The same calculations using the average low P/E and low estimated E/S give the low estimated price.

The difference between the high and low estimated prices, called the range, is then divided into thirds. The lower third is called the "Buy Zone," the middle third the "Maybe Zone," and the upper third the "Sell Zone."

Also calculated are the upside and downside ratios. The upside ratio is the difference between the high estimated price and the current price and is a measure of the potential gain of the stock. The downside ratio is the difference between the current price and

SOFT TSE  
93<sup>1</sup>/<sub>4</sub> D43<sup>3</sup>/<sub>4</sub>  
5NCL KY+1.2



# IN THE MARKET

BY RANDOLPH MATEER



the low estimated price and represents the risk of loss. The higher these ratios, the higher the chance of gain and the lower the risk of loss.

The stock analysis program reaches the same end in a slightly different way. You are asked to enter sales (S) and earnings (E), beginning with the first year and ending with the most recent one. Next, you enter the low and high price/earning ratios (LPE and HPE). Finally, the computer needs the current price of the stock (CP).

First, the computer calculates the yearly percentage growth in sales and earnings (GS and GE) and the average yearly percentage growth (AGS and AGE). These last two figures are displayed in the appropriate part of the program and are to be used by you in

estimating future growth.

When you go to the sales or earnings areas, you are given the average historic growth figures and allowed to enter your estimate of future growth. The computer then displays the appropriate table for the 10 year period, based on your estimated growth, and allows you to change this growth, return to the main menu or print the table.

In the price forecast area you are given the high calculated E/S, based on historic growth, and asked to enter your estimated high and low earnings per share (HES and LES). The computer then displays the upside and downside ratios and the three zones, again allowing you to make changes in your estimates.

The program will not make you rich,

at least I don't think so. However, it may provide you with some insight into stocks and also some enjoyment. By the way, if you come across any hot stocks, call me before you call your broker.

---

*(Randolph Mateer has two degrees in chemistry and is a freelance writer specializing in how-to articles. Although his work has been published in wood-working, photographic and outdoor magazines, this is his first computer oriented submission. He may be contacted at 20524 Gardendale, Detroit, MI 48221.)*

---

CTO RSO  
30<sup>3</sup>/<sub>8</sub> SD9  
SOF+1 500.16



# LISTING: STOCK FORECAST

```

1000 'STOCK FORECAST
2000 'RANDDOLPH MATEER
3000 '20524 GARDENDALE
4000 'DETROIT, MI 48221
5000 CLS
6000 LOCATE 5,1: PRINT "What is the Name of the Company"
7000 PRINT :PRINT : INPUT N$
8000 CLS
9000 LOCATE 5,1: PRINT "Enter Sales for the Past Five Years"
10000 PRINT :PRINT
11000 FOR X=1 TO 5
12000 PRINT :INPUT S(X)
13000 NEXT X
14000 PRINT :PRINT "Any Corrections (y/n)"
15000 PRINT :INPUT A$
16000 IF A$="y" THEN 8000 ELSE 17000
17000 CLS
18000 LOCATE 5,1: PRINT "Enter E/S for the Past Five Years"
19000 PRINT :PRINT
20000 FOR X=1 TO 5
21000 PRINT :INPUT E(X)
22000 NEXT X
23000 PRINT :PRINT "Any Corrections (y/n)"
24000 PRINT :INPUT A$
25000 IF A$="y" THEN 17000 ELSE 26000
26000 CLS
27000 LOCATE 5,1: PRINT "Enter Low P/E for the Past Five Years"
28000 PRINT :PRINT
29000 FOR X=1 TO 5
30000 PRINT :INPUT LPE(X)
31000 NEXT X
32000 PRINT :PRINT "Any Corrections (y/n)"
33000 PRINT :INPUT A$
34000 IF A$="y" THEN 26000 ELSE 35000
35000 CLS
36000 LOCATE 5,1: PRINT "Enter High P/E for the Past Five Years"
37000 PRINT :PRINT
38000 FOR X=1 TO 5
39000 PRINT :INPUT HPE(X)
40000 NEXT X
41000 PRINT :PRINT "Any Corrections (y/n)"
42000 PRINT :INPUT A$
43000 IF A$="y" THEN 35000 ELSE 44000
44000 CLS
45000 LOCATE 5,1: PRINT "What is the Current Selling Price of the Stock"
46000 PRINT :PRINT : INPUT CP
47000 REM***AVERAGING SUBROUTINE***REM
48000 CLS
49000 GS=0: GE=0
50000 FOR X=1 TO 4
51000 GS(X)=0: GE(X)=0
52000 Y=X + 1
53000 GS(X)=GS(X)+S(Y)-S(X)
54000 GE(X)=GE(X)+E(Y)-E(X)
55000 GS=GS+GS(X)/S(X)
56000 GE=GE+GE(X)/E(X)
57000 NEXT X
58000 AGS=1000*GS/4

```

SOF	TSE	CTO	RSO	FTS	ECT	ORS	SOF	TSE	CTO	RSO	FTS
93 1/4	D43 3/4	30 3/8	SD91	LA3 1/4	64 3/8	J5NCL	93 1/4	D43 3/4	30 3/8	SD91	LA3 1/4
198.41 - .98	500.16	164.50	SOFT+16	KY+1.2	16 3/4	198.41 - .98	500.16	164.50	SOFT+1		



```

5900 AGS=INT(AGS*100+.05)/100
6000 AGE=100*GE/4
6100 AGE=INT(AGE*100+.05)/100
6200 REM***MENU SUBROUTINE***REM
6300 CLS
6400 LOCATE 5,1: PRINT "1) Earnings"
6500 PRINT :PRINT "2) Sales"
6600 PRINT :PRINT "3) Price Forecast"
6700 PRINT :PRINT "4) Enter Another Stock"
6800 PRINT :PRINT "5) End Program"
6900 PRINT :PRINT : INPUT O
7000 ON O GOTO 7300,9900,12400,500,7100
7100 PRINT :PRINT :END
7200 REM***EARNINGS SUBROUTINE***REM
7300 CLS
7400 ESG=0
7500 PRINT :PRINT :PRINT "Historic E/S Growth is"AGE"Percent"
7600 PRINT :PRINT "Enter Your Estimated E/S Growth"
7700 PRINT :PRINT : INPUT EEG
7800 CLS
7900 FOR X=6 TO 10
8000 E(X)=0
8100 Y=X - 1
8200 E(X)=E(X) + E(Y) + EEG*E(Y)/100
8300 E(X)=INT(E(X)*100+.05)/100
8400 NEXT X
8500 SYMBOL(2,1),N$,2,1,2,0: LOCATE 1,40
8600 PRINT "Historic E/S Growth is"AGE"Percent": LOCATE 3,40

```

SOF	TSE	CTO	RSO	FTS	ECT
33 1/4	D43 3/4	30 3/8	SD91	LA3 1/4	64 3/8 J5
198.41 - .98			500.16	164.50	SOFT+16 KY+

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Marietta, Georgia 30067



```

87000 PRINT "Estimated Growth is"EEG"Percent"
88000 PRINT :PRINT "Year","E/S"
89000 PRINT
90000 FOR X=1 TO 10
91000 PRINT X,E(X)
92000 NEXT X
93000 PRINT :PRINT :PRINT "1) Change Estimated Growth Rate"
94000 PRINT "2) Return to Main Menu"
95000 PRINT "3) Print a Copy of the Earnings Report"
96000 PRINT :PRINT : INPUT D
97000 ON D GOTO 73000,63000,184000
98000 REM***SALES SUBROUTINE***REM
99000 CLS
100000 ESG=0
101000 PRINT :PRINT : PRINT "Historic Sales Growth is"AGS"Percent"
102000 PRINT :PRINT "Enter Your Estimated Sales Growth"
103000 PRINT :PRINT : INPUT ESG
104000 CLS
105000 FOR X=6 TO 10
106000 S(X)=0
107000 Y=X-1
108000 S(X)=S(X)+S(Y)+ESG*S(Y)/100
109000 S(X)=INT(S(X))
110000 NEXT X
111000 SYMBOL(2,1),N$,2,1,2,0: LOCATE 1,40
112000 PRINT "Historic Sales Growth is"AGS"Percent": LOCATE 3,40
113000 PRINT "Estimated Sales Growth is"ESG"Percent"
114000 PRINT :PRINT "Year","Sales"
115000 FOR X=1 TO 10
116000 PRINT X,S(X)
117000 NEXT X
118000 PRINT :PRINT :PRINT "1) Change Sales Growth"
119000 PRINT "2) Return to Main Menu"
120000 PRINT "3) Print a Copy of the Sales"
121000 PRINT :PRINT : INPUT E
122000 ON E GOTO 99000,63000,195000
123000 REM***PRICE FORECAST SUBROUTINE***REM
124000 CLS
125000 LPE=0: HPE=0
126000 FOR X=6 TO 10
127000 E(X)=0
128000 Y=X-1
129000 E(X)=E(X)+E(Y)+AGE*E(Y)/100
130000 E(X)=INT(E(X)*100+.05)/100
131000 NEXT X
132000 X=10
133000 LOCATE 5,1: PRINT "The Calculated High E/S is"E(X)
134000 PRINT :PRINT :PRINT "Enter Your High Estimated E/S"
135000 PRINT :PRINT : INPUT HES
136000 PRINT :PRINT : PRINT "Enter Your Low Estimated E/S"
137000 PRINT :PRINT : INPUT LES
138000 CLS
139000 IF LES>HES GOTO 133000
140000 FOR X=1 TO 5
141000 LPE=LPE+LPE(X)
142000 HPE=HPE+HPE(X)
143000 NEXT X
144000 ALPE=LPE/5
145000 AHPE=HPE/5

```

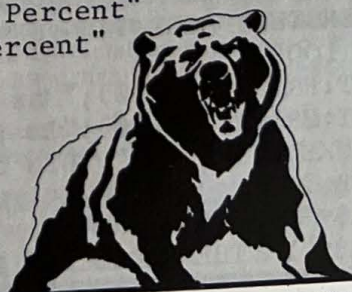
SOF	TSE	CTO	RSO	FTS	ECT	ORS	SOF	TSE	CTO	RSO	FTS	
93 <sup>1</sup> / <sub>4</sub>	D43 <sup>3</sup> / <sub>4</sub>	30 <sup>3</sup> / <sub>8</sub>	SD91	LA3 <sup>1</sup> / <sub>4</sub>	64 <sup>3</sup> / <sub>8</sub>	J5NCL	93 <sup>1</sup> / <sub>4</sub>	D43 <sup>3</sup> / <sub>4</sub>	30 <sup>3</sup> / <sub>8</sub>	SD91	LA3 <sup>1</sup> / <sub>4</sub>	64 <sup>3</sup> / <sub>8</sub>
198.41 - .98	500.16	164.50	SOFT+16	KY+1.2	16 <sup>3</sup> / <sub>4</sub>	198.41 - .98	500.16	164.50	SOFT+1			



```

14600 HI=HES*AHPE
14700 HI=INT(HI*100+.05)/100
14800 LO=LES*ALPE
14900 LO=INT(LO*100+.05)/100
15000 R=(HI-LO)/3
15100 R=INT(R*100+.05)/100
15200 G=HI-CP
15300 G=INT(G*100+.05)/100
15400 L=CP-LO
15500 L=INT(L*100+.05)/100
15600 SYMBOL(2,1),N$,2,1,2,0: LOCATE 1,40
15700 PRINT "Low Estimated E/S is"LES : LOCATE 3,40
15800 PRINT "High Estimated E/S is"HES
15900 X=10
16000 PRINT :PRINT "Calculated High E/S is"E(X)
16100 PRINT :PRINT "Upside Ratio is"G"to 1          Downside Ratio is"L"to 1"
16200 PRINT :PRINT "Current Price is"CP
16300 PRINT :PRINT :PRINT "Buy Range is"LO"to"LO+R
16400 PRINT :PRINT "Maybe Range is"LO+R"to"LO+2*R
16500 PRINT :PRINT "Sell Range is"LO+2*R"to"HI
16600 PRINT :PRINT :PRINT "1)  Make Changes in the Estimated High and Low E/S"
16700 PRINT "2)  Return to Menu"
16800 PRINT "3)  Print a Copy of the Price Forecast"
16900 PRINT :PRINT : INPUT A
17000 ON A GOTO 12400,6300,17200
17100 REM***PRICE FORECAST PRINT SUBROUTINE***REM
17200 CLS
17300 LPRINT N$ "          Current Price is "CP
17400 LPRINT :LPRINT "Low Est E/S is "LES "          High Est E/S is "HES
17500 X=10
17600 LPRINT :LPRINT "Calculated High E/S is "E(X)
17700 LPRINT :LPRINT "Upside Ratio is"G"to 1          Downside Ratio is"L"to 1"
17800 LPRINT :LPRINT :LPRINT "Buy Range is"LO"to"LO+R
17900 LPRINT :LPRINT "Maybe Range is"LO+R"to"LO+2*R
18000 LPRINT :LPRINT "Sell Range is"LO+2*R"to"HI
18100 LPRINT :LPRINT :LPRINT :LPRINT
18200 GOTO 15600
18300 REM***EARNINGS PRINT SUBROUTINE***REM
18400 CLS
18500 LPRINT N$ "          Historic E/S Growth is"AGE"Percent"
18600 LPRINT :LPRINT "Estimated Growth is"EEG"Percent"
18700 LPRINT :LPRINT "Year","E/S"
18800 LPRINT
18900 FOR X=1 TO 10
19000 LPRINT X,E(X)
19100 NEXT X
19200 LPRINT :LPRINT :LPRINT :LPRINT
19300 GOTO 8500
19400 REM***SALES PRINT SUBROUTINE***REM
19500 CLS
19600 LPRINT N$ "          Historic Sales Growth is"AGS"Percent"
19700 LPRINT :LPRINT "Historic Sales Growth is "AGS " Percent"
19800 LPRINT :LPRINT "Estimated Sales Growth is"ESG"Percent"
19900 LPRINT :LPRINT "Year","Sales"
20000 LPRINT
20100 FOR X=1 TO 10
20200 LPRINT X,S(X)
20300 NEXT X
20400 LPRINT :LPRINT :LPRINT :LPRINT
20500 GOTO 11100

```





## LISTING: DATABASE

```

10 ' *** Last Update October 14, 1984 by J.M.Lesher ***
20 OPTION BASE 1
30 DIM DISK$(2),ALTDISK$(2),FAULT$(40),NEWNAME$(8)
40 DISK$="B:":ALTDISK$="A:":FAULT$="Program Error"
50 CLS
60 ON ERROR GOTO 3340
70 LOCATE 2,32,0:PRINT"DATA BASE MANAGER"
80 LOCATE 6,18:PRINT"Written by R.S.Davis, J.M.Lesher & C.R.Runshe"
90 LOCATE 10,27:PRINT"<";:COLOR 6:PRINT"A";:COLOR 2:PRINT">ccess an existing dat
a file"
100 LOCATE 12,27:PRINT"<";:COLOR 6:PRINT"C";:COLOR 2:PRINT">reate a new data fil
e"
110 LOCATE 14,27:PRINT"<";:COLOR 6:PRINT"D";:COLOR 2:PRINT">elete a data file"
120 LOCATE 16,27:PRINT"<";:COLOR 6:PRINT"E";:COLOR 2:PRINT">xit to operating sys
tem"
130 LOCATE 18,27:PRINT"<";:COLOR 6:PRINT"L";:COLOR 2:PRINT">ist existing data fi
les"
140 LOCATE 20,27:PRINT"<";:COLOR 6:PRINT"R";:COLOR 2:PRINT">ead from & write to
";ALTDISK$;" instead of ";DISK$
150 LOCATE 22,27:PRINT"<";:COLOR 6:PRINT"S";:COLOR 2:PRINT">et time & date"
160 SPACE1=0
170 DELAY=0
180 A$=INKEY$:LOCATE 4,27:PRINT DATE$;" ";TIME$
190 IF A$<>"" THEN 230
200 DELAY=DELAY+1:IF DELAY<200 THEN 180
210 CLS:A$=INKEY$:IF A$="" THEN 210
220 GOTO 50
230 GOSUB 3620
240 ON INSTR("ACDELRS",A$) GOTO 2580,290,3680,3210,3230,3310,3390
250 GOTO 180
260 CLS:LOCATE 1,1,1:PRINT""
270 A$=INKEY$:IF A$="" THEN 270
280 GOTO 50
290 LOCATE 1,1,0
300 CLS:LOCATE 2,27:PRINT"CREATE A NEW DATA BASE FILE"
310 LOCATE 10,22,1:INPUT"Enter Data Base File Name";FILENAME$
320 IF FILENAME$="" THEN 50
330 LOCATE 13,22:INPUT"Number of records";MAXREC
340 LOCATE 14,22:INPUT"Number of fields ";NUMFLDS
350 DIM DAT$(MAXREC,NUMFLDS)
360 PRINT
370 FOR LOOP=1 TO NUMFLDS
380 LOCATE (LOOP+15),22:PRINT "What is the name of field"LOOP;
390 INPUT FLDNAME$(LOOP):NEXT LOOP
400 CLS:PRINT TAB(10)"The Data File Set-Up is as follows:":PRINT
410 LOCATE 5,10:PRINT "File Name - "FILENAME$:PRINT
420 SPACE2=0
430 FOR LOOP=1 TO NUMFLDS
440 PRINT TAB(10);"Field "LOOP" - "FLDNAME$(LOOP)
450 LENGTH=LEN(FLDNAME$(LOOP))
460 IF LENGTH>SPACE2 THEN SPACE2=LENGTH+4
470 NEXT LOOP
480 PRINT:PRINT TAB(10);"Max# of Records - "MAXREC
490 PRINT:PRINT TAB(10);"Is this correct [Y/N]";
500 A$=INKEY$:IF A$="" THEN 500
510 GOSUB 3620
520 IF A$="N" THEN RUN
530 IF A$="Y" THEN GOTO 540 ELSE 400

```



```

540 NXTREC=1
550 CLS
560 SPACE1=29
570 LOCATE 2,29:PRINT"DATA FILE MANIPULATION"
580 LOCATE 5,1,1:PRINT TAB(SPACE1+2)"SELECT 1-9"
590 PRINT:PRINT TAB(SPACE1)"1      Input data"
600 PRINT TAB(SPACE1)"2      Scan Field"
610 PRINT TAB(SPACE1)"3      Delete Records"
620 PRINT TAB(SPACE1)"4      Sort File"
630 PRINT TAB(SPACE1)"5      Save File"
640 PRINT TAB(SPACE1)"6      Word Search"
650 PRINT TAB(SPACE1)"7      Modify Record"
660 PRINT TAB(SPACE1)"8      Print a File"
670 PRINT TAB(SPACE1)"9      Return to Main Display"
680 PRINT:PRINT TAB(SPACE1)"Enter Desired Function ";
690 A$=INKEY$:IF A$="" THEN 690
700 IF A$="9" THEN RUN
710 ON INSTR("12345678",A$) GOSUB 730,820,1000,1230,2190,1690,1970,2940
720 GOTO 550
730 CLS
740 PRINT:PRINT TAB(10)"Record #""NXTREC
750 FOR LOOP=1 TO NUMFLDS
760 PRINT "Enter "FLDNAME$(LOOP)TAB(SPACE2+5);:LINE INPUT DAT$(NXTREC,LOOP)
770 IF DAT$(NXTREC,LOOP)="STOP" OR DAT$(NXTREC,LOOP)="stop" THEN 810
780 NEXT LOOP
790 NXTREC=NXTREC+1:IF NXTREC>MAXREC THEN 550
800 GOTO 740
810 DAT$(NXTREC,LOOP)="":GOTO 550

```



## The Handicapper

Use your Sanyo to improve your performance at the track! These fine programs for **Thoroughbreds**, **Harness Horses** and **Greyhounds** combine the power of your Sanyo 550 series computer with the savvy of a veteran handicapper. Spend a few minutes entering data, and The Handicapper will rank the horses or dogs in each race. All the information is readily available from the Thoroughbred Racing Form, harness or greyhound track program. We even provide a diagram showing you where to get the data you need!

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Complete instructions and wagering guide included. Thoroughbred, Harness or Greyhound Handicapper, only \$49.95 each. Any two, just \$74.95. All three only \$99.95. Checks, Money Orders or VISA/MC welcomed.



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```

820 CLS
830 PAGE=INT(24/(NUMFLDS+3))
840 FOR LOOP1=1 TO NXTREC-1 STEP PAGE
850 FOR LOOP2=LOOP1 TO LOOP1+(PAGE-1)
860 IF LOOP2>=NXTREC THEN 970
870 PRINT:PRINT "Record #"LOOP2
880 FOR LOOP3=1 TO NUMFLDS
890 PRINT "   "FLDNAME$(LOOP3);TAB(SPACE2)" - "DAT$(LOOP2,LOOP3)
900 NEXT LOOP3
910 NEXT LOOP2
920 PRINT:PRINT "Enter <*> to stop scan"
930 PRINT "Enter <CR> to continue";
940 A$=INKEY$:IF A$="" THEN 940
950 IF A$="*" THEN 550
960 CLS:NEXT LOOP1
970 PRINT:PRINT"***** LAST RECORD *****";
980 A$=INKEY$:IF A$="" THEN 980
990 GOTO 550
1000 CLS:RECORD=0:LOCATE 2,28:PRINT"DELETE A DATA FILE RECORD"
1010 LOCATE 5,9,1:PRINT"To delete -- The record # must be known. Is it known? [Y
/N]";
1020 A$=INKEY$:IF A$="" THEN 1020
1030 GOSUB 3620
1040 IF A$="Y" THEN 1100
1050 IF A$="N" THEN LOCATE 7,9:PRINT"Enter <S> to scan records"; ELSE 1000
1060 A$=INKEY$:IF A$="" THEN 1060
1070 GOSUB 3620
1080 IF A$="S" THEN 820
1090 GOTO 550
1100 LOCATE 7,9:INPUT "What is the record #";RECORD
1110 IF RECORD>NXTREC-1 THEN 1090
1120 IF RECORD=0 THEN 550
1130 FOR LOOP1=RECORD TO NXTREC-2
1140 FOR LOOP2=1 TO NUMFLDS
1150 DAT$(LOOP1,LOOP2)=DAT$((LOOP1+1),LOOP2)
1160 NEXT LOOP2
1170 NEXT LOOP1
1180 FOR LOOP=1 TO NUMFLDS
1190 DAT$(LOOP,LOOP)=""
1200 NEXT LOOP
1210 NXTREC=NXTREC-1
1220 GOTO 550
1230 CLS:LOCATE 2,29:PRINT"SORT DATA FILE RECORDS"
1240 LOCATE 6,30,1:PRINT"1      Sort on one field"
1250 LOCATE 8,30:PRINT"2      Sort on two fields"
1260 LOCATE 12,30:PRINT TAB(30)"Enter your selection ";
1270 A$=INKEY$:IF A$="" THEN 1270
1280 VALUE=VAL(A$)
1290 IF VALUE<1 OR VALUE>2 THEN 550
1300 CLS:LOCATE 2,29:PRINT"SORT DATA FILE RECORDS"
1310 PLURAL$=""
1320 IF VALUE=2 THEN PLURAL$="s "
1330 LOCATE 6,25:PRINT"Select the field";PLURAL$;"you will sort by"
1340 FOR LOOP=1 TO NUMFLDS
1350 LOCATE (LOOP+7),29:PRINT LOOP" - "FLDNAME$(LOOP)
1360 NEXT LOOP
1370 IF VALUE=1 THEN LOCATE (NUMFLDS+9),30,1:PRINT "Select field";:GOTO 1400
1380 IF VALUE=2 THEN LOCATE (NUMFLDS+9),30,1:PRINT "Select 2 fields (x,y)";:GOTO
1530

```



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```

1390 GOTO 1230
1400 INPUT SEARCH1
1410 IF SEARCH1<1 OR SEARCH1>NUMFLDS GOTO 1230
1420 SEARCH=0
1430 FOR LOOP1=1 TO NXTREC-2
1440 IF DAT$(LOOP1,SEARCH1)<=DAT$(LOOP1+1,SEARCH1) THEN 1500
1450 FOR LOOP2=1 TO NUMFLDS
1460 SWAP DAT$(LOOP1,LOOP2),DAT$(LOOP1+1,LOOP2)
1470 NEXT LOOP2
1480 SEARCH=1
1490 LOOP1=LOOP1-1:IF LOOP1<1 THEN LOOP1=1:GOTO 1440
1500 NEXT LOOP1
1510 IF SEARCH=1 THEN 1420
1520 RETURN
1530 INPUT SEARCH1,SEARCH2
1540 IF SEARCH1<1 OR SEARCH1>NUMFLDS THEN 1230
1550 IF SEARCH2<1 OR SEARCH2>NUMFLDS OR SEARCH2=SEARCH1 THEN 1230
1560 SEARCH=0
1570 FOR LOOP1=1 TO NXTREC-2
1580 SEARCH1$=DAT$(LOOP1,SEARCH1)+DAT$(LOOP1,SEARCH2)
1590 SEARCH2$=DAT$(LOOP1+1,SEARCH1)+DAT$(LOOP1+1,SEARCH2)
1600 IF SEARCH1$<=SEARCH2$ THEN 1660
1610 FOR LOOP2=1 TO NUMFLDS
1620 SWAP DAT$(LOOP1,LOOP2),DAT$(LOOP1+1,LOOP2)
1630 NEXT LOOP2
1640 SEARCH=1
1650 LOOP1=LOOP1-1:IF LOOP1<1 THEN LOOP1=1:GOTO 1600
1660 NEXT LOOP1
1670 IF SEARCH=1 THEN 1560
1680 RETURN
1690 CLS:LOCATE 2,31:PRINT"WORD/PHRASE SEARCH"
1700 LOCATE 6,15,1:PRINT"Enter the Word or Phrase to search for";
1710 INPUT SEARCH$:SEARCHCNT=0
1720 CLS:COUNT=0
1730 FOR LOOP1=1 TO NXTREC-1
1740 FOR LOOP2=1 TO NUMFLDS
1750 CHARNUM=INSTR(DAT$(LOOP1,LOOP2),SEARCH$)
1760 LENGTH=LEN(DAT$(LOOP1,LOOP2))
1770 IF INSTR(DAT$(LOOP1,LOOP2),SEARCH$) THEN GOTO 1780 ELSE GOTO 1920
1780 SEARCHCNT=1:PRINT:PRINT "Record #"LOOP1:COUNT=COUNT+1
1790 FOR LOOP3=1 TO NUMFLDS
1800 IF LOOP2<>LOOP3 THEN 1850
1810 PRINT " "FLDNAME$(LOOP3);TAB(SPACE2)" - ";:IF CHARNUM=1 THEN 1820 ELSE PRI
NT LEFT$(DAT$(LOOP1,LOOP3),CHARNUM-1);
1820 COLOR 6:PRINT MID$(DAT$(LOOP1,LOOP3),CHARNUM,LEN(SEARCH$));
1830 IF LENGTH=CHARNUM+LEN(SEARCH$)-1 THEN PRINT ELSE COLOR 2:PRINT RIGHT$(DAT$(
LOOP1,LOOP3),LENGTH-(CHARNUM+LEN(SEARCH$)-1))
1840 COLOR 2:GOTO 1860
1850 PRINT " "FLDNAME$(LOOP3);TAB(SPACE2)" - "DAT$(LOOP1,LOOP3)
1860 NEXT LOOP3
1870 PAGE=INT(24/(NUMFLDS+3))
1880 IF COUNT<PAGE THEN 1930
1890 PRINT:PRINT"Enter <CR> to continue";
1900 A$=INKEY$:IF A$="" THEN 1900
1910 COUNT=0:CLS
1920 NEXT LOOP2
1930 NEXT LOOP1
1940 IF SEARCHCNT=0 THEN PRINT:PRINT "*** NO MATCH ***" ELSE PRINT:PRINT "*** AL
L MATCHES FOUND ***"

```



```

1950 PRINT"Enter <CR> for Main Display";
1960 A$=INKEY$:IF A$="" THEN 1960 ELSE RETURN
1970 CLS:RECORD=0:LOCATE 2,28:PRINT"MODIFY A DATA FILE RECORD"
1980 LOCATE 5,9,1:PRINT"To modify -- The record # must be known. Is it known? [Y
/N]";
1990 A$=INKEY$:IF A$="" THEN 1990
2000 GOSUB 3620
2010 IF A$="Y" GOTO 2070
2020 IF A$="N" THEN LOCATE 7,9:PRINT"Enter <S> to scan file";ELSE GOTO 1980
2030 A$=INKEY$:IF A$="" THEN 2030
2040 GOSUB 3620
2050 IF A$="S" THEN GOTO 820
2060 GOTO 550
2070 CLS:PRINT "Enter a '0' to exit"
2080 INPUT "What is the record #";RECORD
2090 IF RECORD=0 THEN RETURN
2100 CLS
2110 FOR LOOP=1 TO NUMFLDS
2120 PRINT " FLDNAME$(LOOP);TAB(SPACE2)" - "DAT$(RECORD,LOOP)
2130 LINE INPUT "Enter new data or <CR> for next field: ";A$
2140 IF A$="" THEN 2160
2150 DAT$(RECORD,LOOP)=A$
2160 NEXT LOOP
2170 GOTO 2070
2180 ' *** Save A Record ***
2190 LENGTH=LEN(FILENAME$)
2200 IF MID$(FILENAME$,2,1)=":" THEN FILENAME$=RIGHT$(FILENAME$,LENGTH-2)
2210 LENGTH=LEN(FILENAME$)

```

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```

2220 IF RIGHT$(FILENAME$,4)=".DAT" THEN FILENAME$=LEFT$(FILENAME$,LENGTH-4)
2230 A$=FILENAME$:GOSUB 3620:FILENAME$=A$
2240 CLS:LOCATE 2,30:PRINT"SAVE A DATA BASE FILE"
2250 LOCATE 8,20:PRINT "Parameters are as follows:"
2260 LOCATE 10,20:PRINT"File name: ";FILENAME$
2270 LOCATE 11,20:PRINT"Logged Drive: ";DISK$
2280 LOCATE 17,20:PRINT"'ESC' key will return to menu"
2290 LOCATE 15,20:PRINT"Do you wish to make any changes [Y/N] ";
2300 A$=INKEY$:IF A$="" THEN 2300
2310 GOSUB 3620
2320 IF A$=CHR$(27) THEN 550
2330 IF A$="N" THEN 2410
2340 LOCATE 17,20:INPUT"Enter New File Name (<CR> = Same Name) ";NEWNAME$
2350 IF NEWNAME$<>"" THEN FILENAME$=NEWNAME$
2360 LOCATE 18,20:PRINT"Change to other disk drive?";
2370 A$=INKEY$:IF A$="" THEN 2370
2380 GOSUB 3620
2390 IF A$="Y" THEN SWAP DISK$,ALTDISK$
2400 GOTO 2190
2410 CLS:LOCATE 10,22:PRINT "Please wait -- File is being stored"
2420 FILENAME$=DISK$+FILENAME$+".DAT"
2430 OPEN "O",1,FILENAME$
2440 WRITE# 1,MAXREC
2450 WRITE# 1,NUMFLDS
2460 WRITE# 1,NXTREC
2470 FOR LOOP=1 TO NUMFLDS
2480 WRITE# 1,FLDNAME$(LOOP)
2490 NEXT LOOP
2500 FOR LOOP1=1 TO NXTREC-1
2510 FOR LOOP2=1 TO NUMFLDS
2520 WRITE# 1,DAT$(LOOP1,LOOP2)
2530 NEXT LOOP2
2540 NEXT LOOP1
2550 CLOSE 1
2560 RETURN
2570 ' *** Load A Record ***
2580 CLS:LOCATE 2,24:PRINT"ACCESS AN EXISTING DATA BASE FILE"
2590 LOCATE 10,22,1:INPUT"Enter Data Base File Name";FILENAME$
2600 A$=FILENAME$:GOSUB 3620:FILENAME$=A$
2610 IF FILENAME$="" THEN 50
2620 CLS:LOCATE 10,22,0:PRINT"Please wait -- File is being loaded"
2630 LENGTH=LEN(FILENAME$)
2640 IF MID$(FILENAME$,2,1)=":" THEN FILENAME$=RIGHT$(FILENAME$,LENGTH-2)
2650 LENGTH=LEN(FILENAME$)
2660 IF RIGHT$(FILENAME$,4)=".DAT" THEN FILENAME$=LEFT$(FILENAME$,LENGTH-4)
2670 FILENAME$=DISK$+FILENAME$+".DAT"
2680 OPEN "I", 1, FILENAME$
2690 INPUT# 1,MAXREC
2700 INPUT# 1,NUMFLDS
2710 INPUT# 1,NXTREC
2720 LOCATE 14,5:PRINT NXTREC-1;"of a possible";MAXREC;"records have been used"
2730 LOCATE 15,6:PRINT"Do you wish to change the maximum number of records [Y/N]
";
2740 A$=INKEY$:IF A$="" THEN 2740
2750 GOSUB 3620
2760 IF A$="Y" THEN LOCATE 17,6:INPUT"Enter new maximum number ";MAXREC
2770 LENGTH=0
2780 FOR LOOP=1 TO NUMFLDS
2790 INPUT# 1,FLDNAME$(LOOP)

```



```

2800 LENGTH=LEN(FLDNAME$(LOOP))
2810 IF LENGTH>SPACE2 THEN SPACE2=LENGTH
2820 NEXT LOOP
2830 SPACE2=SPACE2+3
2840 DIM DAT$(MAXREC,NUMFLDS)
2850 FOR LOOP1=1 TO NXTREC
2860 FOR LOOP2=1 TO NUMFLDS
2870 IF EOF(1) THEN 2910
2880 INPUT# 1,DAT$(LOOP1,LOOP2)
2890 NEXT LOOP2
2900 NEXT LOOP1
2910 CLOSE
2920 GOTO 550
2930 ' *** Output To Printer ***
2940 PAGE=INT(58/(NUMFLDS+2))
2950 CLS:LOCATE 2,27:PRINT"OUTPUT DATA FILE TO PRINTER"
2960 LOCATE 8,20,1:INPUT"Input Desired Printout Title";TITLE$
2970 LENGTH=LEN(TITLE$)
2980 SPACE1=40-(INT(LENGTH/2))
2990 LOCATE 10,20:INPUT"Do you want record numbers printed [Y/N] ";REC$
3000 IF REC$="" THEN REC$="N"
3010 A$=REC$
3020 GOSUB 3620
3030 REC$=A$
3040 LOCATE 11,20:INPUT"Do you want field titles printed [Y/N] ";FLD$
3050 IF FLD$="" THEN FLD$="N"
3060 A$=FLD$
3070 GOSUB 3620
3080 FLD$=A$
3090 LOCATE 15,20,0:PRINT"Ensure printer is ready and depress <CR>"
3100 A$=INKEY$:IF A$="" THEN 3100
3110 FOR LOOP1=1 TO NXTREC-1 STEP PAGE
3120 LPRINT:LPRINT:LPRINT TAB(SPACE1)TITLE$:LPRINT:LPRINT
3130 FOR LOOP2=LOOP1 TO LOOP1+(PAGE-1)
3140 IF LOOP2>=NXTREC THEN 3190
3150 IF REC$="Y" THEN LPRINT:LPRINT "Record #";LOOP2 ELSE LPRINT:LPRINT
3160 FOR LOOP3=1 TO NUMFLDS
3170 IF FLD$="Y" THEN LPRINT " " FLDNAME$(LOOP3);TAB(SPACE2)" - "DAT$(LOOP2,LOOP
3) ELSE LPRINT DAT$(LOOP2,LOOP3)
3180 NEXT LOOP3:NEXT LOOP2
3190 LPRINT CHR$(12):NEXT LOOP1
3200 RETURN
3210 SYSTEM
3220 ' *** Display DBM Files ***
3230 CLS
3240 LOCATE 2,29:PRINT"DATA BASE MANAGER FILES"
3250 LOCATE 8,1,0:COLOR 2
3260 A$=DISK$+"*.DAT"
3270 FILES A$
3280 LOCATE 24,1:PRINT"Depress any key to continue"
3290 A$=INKEY$:IF A$="" THEN 3290
3300 GOTO 50
3310 SWAP DISK$,ALTDISK$
3320 LOCATE 20,27:PRINT"<";:COLOR 7:PRINT"R";:COLOR 2:PRINT">ead from & write to
";ALTDISK$;" instead of ";DISK$
3330 GOTO 160
3340 LOCATE 23,1:PRINT FAULT$
3350 PRINT"Input any key to continue"
3360 FAULT$="Program Error"

```



```

3370 A$=INKEY$:IF A$="" THEN 3370
3380 RUN
3390 CLS:LOCATE 2,31:PRINT"TIME & DATE UTILITY"
3400 LOCATE 10,30:PRINT"<";:COLOR 7:PRINT"D";:COLOR 2:PRINT">ate Set"
3410 LOCATE 12,30:PRINT"<";:COLOR 7:PRINT"E";:COLOR 2:PRINT">xit to Main Display"
"
3420 LOCATE 14,30:PRINT"<";:COLOR 7:PRINT"T";:COLOR 2:PRINT">ime Set"
3430 A$=INKEY$:LOCATE 5,27:PRINT DATE$;" ";TIME$:IF A$="" THEN 3430
3440 GOSUB 3620
3450 ON INSTR("DET",A$) GOTO 3470,50,3530
3460 GOTO 3430
3470 LOCATE 18,20,1:INPUT"Enter new date: ";DAT$
3480 IF DAT$="" THEN 3520
3490 LENGTH=LEN(DAT$)
3500 IF LENGTH>=3 AND LENGTH<=5 THEN DAT$=DAT$+"-84"
3510 DATE$=DAT$
3520 GOTO 3390
3530 LOCATE 18,20,1:INPUT"Enter new time: ";DAT$
3540 IF DAT$="" THEN 3600
3550 LENGTH=LEN(DAT$)
3560 IF LENGTH=1 THEN DAT$="0"+DAT$+":00:00"
3570 IF LENGTH=2 THEN DAT$=DAT$+":00:00"
3580 IF LENGTH=5 THEN DAT$=DAT$+":00"
3590 TIME$=DAT$
3600 GOTO 3390
3610 ' *** Change Lower Case To Upper Case ***
3620 FOR CHARCNT=1 TO LEN(A$)
3630 CHAR=ASC(MID$(A$,CHARCNT,1))
3640 IF CHAR>=97 AND CHAR<=122 THEN MID$(A$,CHARCNT,1)=CHR$(CHAR-32)
3650 NEXT CHARCNT
3660 RETURN
3670 ' *** Delete A Data File ***
3680 CLS:LOCATE 2,31:PRINT"DELETE A DATA FILE"

```

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```

3690 LOCATE 6,15:INPUT"Enter name of file to delete ";FILENAME$
3700 LENGTH=LEN(FILENAME$)
3710 IF MID$(FILENAME$,2,1)=":" THEN FILENAME$=RIGHT$(FILENAME$,LENGTH-2)
3720 LENGTH=LEN(FILENAME$)
3730 IF RIGHT$(FILENAME$,4)=".DAT" THEN FILENAME$=LEFT$(FILENAME$,LENGTH-4)
3740 FILENAME$=DISK$+FILENAME$+".DAT"
3750 LENGTH=LEN(FILENAME$)
3760 LOCATE 11,20:PRINT"File name      : ";RIGHT$(FILENAME$,LENGTH-2)
3770 LOCATE 12,20:PRINT"Logged drive : ";DISK$
3780 LOCATE 15,20:COLOR 6:PRINT"ARE YOU SURE [Y/N] ":COLOR 2
3790 AS=INKEY$:IF AS="" THEN 3790
3800 GOSUB 3620
3810 IF AS<>"Y" THEN 50
3820 KILL FILENAME$
3830 GOTO 50

```



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Okay, troops, listen up! In this installment of 'BASIC Training,' we learn a few more methods for tactical screen placement

# MORE ON TEXT

**L**ast month, if you recall, we made our way through several of the methods for controlling the formatting of text on the screen using Sanyo BASIC commands. We looked at *PRINT*, *WRITE*, *INPUT*, *TINPUT*, and the delimiters used in conjunction with each of them. Also, we looked at how to make use of the *TAB* command, which allows more flexibility in spacing text on a line than *PRINT* with the comma delimiter.

## Other Spacing Commands

Two other commands exist in Sanyo BASIC for spacing on a line. They are not commonly used, but you should know about them in case you see them in a program. Also, you might find them handy in applications of your own.

*SPACE\$(number)* is similar to *TAB*.

It generates a designated number of blank spaces, so you don't need to specify *TAB* locations. Here's a simple example:

```
10 FOR X=1 TO 10
20 PRINT SPACE$(4)"TEST";
30 NEXT X
```

Don't forget the semicolon at the end of program Line 20. When you *RUN* this, you'll get 10 "TEST" words (without quotes) with four spaces between them, all on one line.

*SPC(number)* is a very similar command. Instead of generating blank spaces, it skips ahead the designated number of spaces. In the example above, replace *SPACE\$(4)* with *SPC(4)* and the end result on the screen is the same.

## PRINTing Text On Your Printer

Unfortunately, Sanyo BASIC does not provide a direct "screen dump" command, available on some other computers. Therefore, to get printer output, you must specify this in the program with the *LPRINT* command. This can be in addition to the *PRINT* command for the screen display, or instead of *PRINT* if you wish to address the printer only.

The printer must be on and ready to print, or else an *LPRINT* statement will cause the program to "freeze" until the printer is ready. The same applies to the *LLIST* command to *LIST* your program on the printer.

In the program just described, you would add another line for printer output, such as:

```
25 LPRINT SPACE$(4)"TEST";
```

If you didn't want or care about this appearing on your screen, you would drop program Line 20.

*WIDTH(number)* controls printer line

width. The minimum is 30 and the maximum is 225.

## Using LOCATE, CSRLIN and POS

There are times when you want to move the cursor to a specific screen position. *LOCATE* is followed by the row and then the column desired, with a comma between them. Some sample *LOCATE* positions are shown in Figure 1.

*LOCATE* moves the cursor to the indicated location, but does nothing else. It defines the next screen printing position.

The *CSRLIN* statement indicates the screen line number of the present cursor, and *POS* gives the horizontal location of the cursor on that line. A short program illustrates the use of all three of these statements:

```
10 CLS
20 LOCATE 5,30
30 PRINT"TEST #1";
40 LOCATE CSRLIN+5,POS-7
50 PRINT"TEST #2";
60 PRINT POS,CSRLIN
```

When you *RUN* this program, the screen clears and "TEST #1" (without the quotation marks) appears on the fifth screen line, starting 30 spaces over from the left, as defined by the *LOCATE* 5,30 in program Line 20.

Program Line 40 says, in effect, "Place the cursor at a new position. Put it five screen lines below its present position, and move it back seven spaces along the new line." Therefore, when "TEST #2" (which occupies seven character spaces) is *PRINTed* by program Line 50, it starts exactly five screen lines below the last *PRINTed* line.

The semicolons at the end of program Lines 30 and 50 keep the cursor from going to the next screen line. Program Line 60 now *PRINTs* the values repre-

## BASIC TRAINING

(Fred Blechman, an acknowledged authority on home computers, has written several articles and books related to microcomputers. He is self-taught in electronics and computer BASIC programming and specializes in writing for beginners. This article is based on material from a forthcoming book by the author, Sanyo MBC-550/555 Beginner/Intermediate Guide, soon to be published by Holt, Rinehart and Winston, a division of CBS College Publishing.) Copyright© 1984 by Fred Blechman.



# FORMATTING

sending the cursor's last vertical and horizontal position.

You must be careful to specify *POS* before *CSRLIN*, since if you put *CSRLIN* first, the *PRINTing* of the *CSRLIN* position will advance the cursor and *POS* will then show the new position of the cursor on that line.

Incidentally, *LOCATE*, *CSRLIN* and *POS* will not position your printer head. They are ignored by your printer.

## PRINT USING

The *PRINT USING* command in Sanyo BASIC is one of the most powerful and useful functions available in formatting output to your screen and printer. This very versatility makes it difficult to describe, especially before you've been exposed to much of the BASIC language.

*PRINT USING* establishes a "template" (sometimes referred to as "image" or "pattern") for text and numbers on a screen or printer line. It allows you to define the number of digits and position them on the screen so the decimal points line up. It automatically rounds off numbers to the specified number of places. It allows you to mix text and numbers on the same line, with a specific number of character spaces for the text. It allows you to place dollar signs in front of numbers. *PRINT USING* addresses the screen, and *LPRINT USING* addresses the printer.

It would take a long article just to describe all the variations of *PRINT USING*, many of which are rarely used. This discussion will be confined to the more common usage of *PRINT USING* symbols and templates.

### Just Numbers

*PRINT USING* is used with numbers primarily for tabulations, lining up

decimal points, and number rounding. The most common symbols used with *PRINT USING* and numbers are the number sign (#), the period (.), the dollar sign (\$), the comma (,), the asterisk (\*), the plus sign (+) and the minus sign (-). (In Sanyo BASIC, unlike the IBM PC; the word *USING* must always follow the space after *PRINT* or *LPRINT* to use this function. You cannot put *TAB* or any other modifying command in between the *PRINT* and the *USING* without generating a syntax error when the program is *RUN*.)

Once again, we'll start with a BASIC program, *RUN* it, modify it, *RUN* it again, and see the results to illustrate the effect. Make sure your computer memory is clear of any other program by typing *NEW* and pressing the *ENTER* key. Then type in the program shown in Listing 1.

The values of *X* and *Y* are *READ* from the *DATA* in program Line 100 two at a time (one for *X*, one for *Y*) until program Line 30 sees the value of *X* or *Y* equals -999.

When you *RUN* this program, your screen will show two columns of numbers, each column "left justified" at display column zero for the first group and 20 for the second group, as shown in Figure 2.

As you can see, this is somewhat of a mess — but that's the way most computers *PRINT* numbers unless instructed otherwise. Notice that the numbers have no decimal places unless the number is expressed in decimals, and all decimal places are shown (three places for the last number, for example.)

Suppose you wanted a more conventional display, with all decimals lined up vertically, and two decimal places for all numbers. That's where *PRINT USING* can come into play. You can change program Line 40 to accommodate numbers of the size you'll be using. Since six

digit numbers are the largest in *DATA*, change Line 40 to this:

```
40 PRINT USING "#####.##";X;  
TAB(20)Y
```

The "#####.##" establishes a template for numbers of six digits plus two decimal places. Any number larger than the template will result in a "Print field overflow in 40" error.

Figure 3 shows the result when the program is *RUN*. The decimal points are all lined up, there are two decimal places for each number, and the last number has been "rounded down" to 1.23. To see the rounding effect of *PRINT USING*, change the 1.234 in program Line 100 to 1.235 and *RUN* again. The last number displayed will now be "rounded up" to 1.24.

### Adding Dollar Signs

To add dollar signs in front of numbers, you have your choice of having the dollar sign just ahead of the number "field" or snuggled right up ahead of the number. Add one dollar sign (\$) in front of the #####.## in Line 40 and *RUN*. Figure 4 shows that dollar signs have been added in the same position in front of all the numbers, just ahead of the largest (six-digit) number provided by the #####.## template.

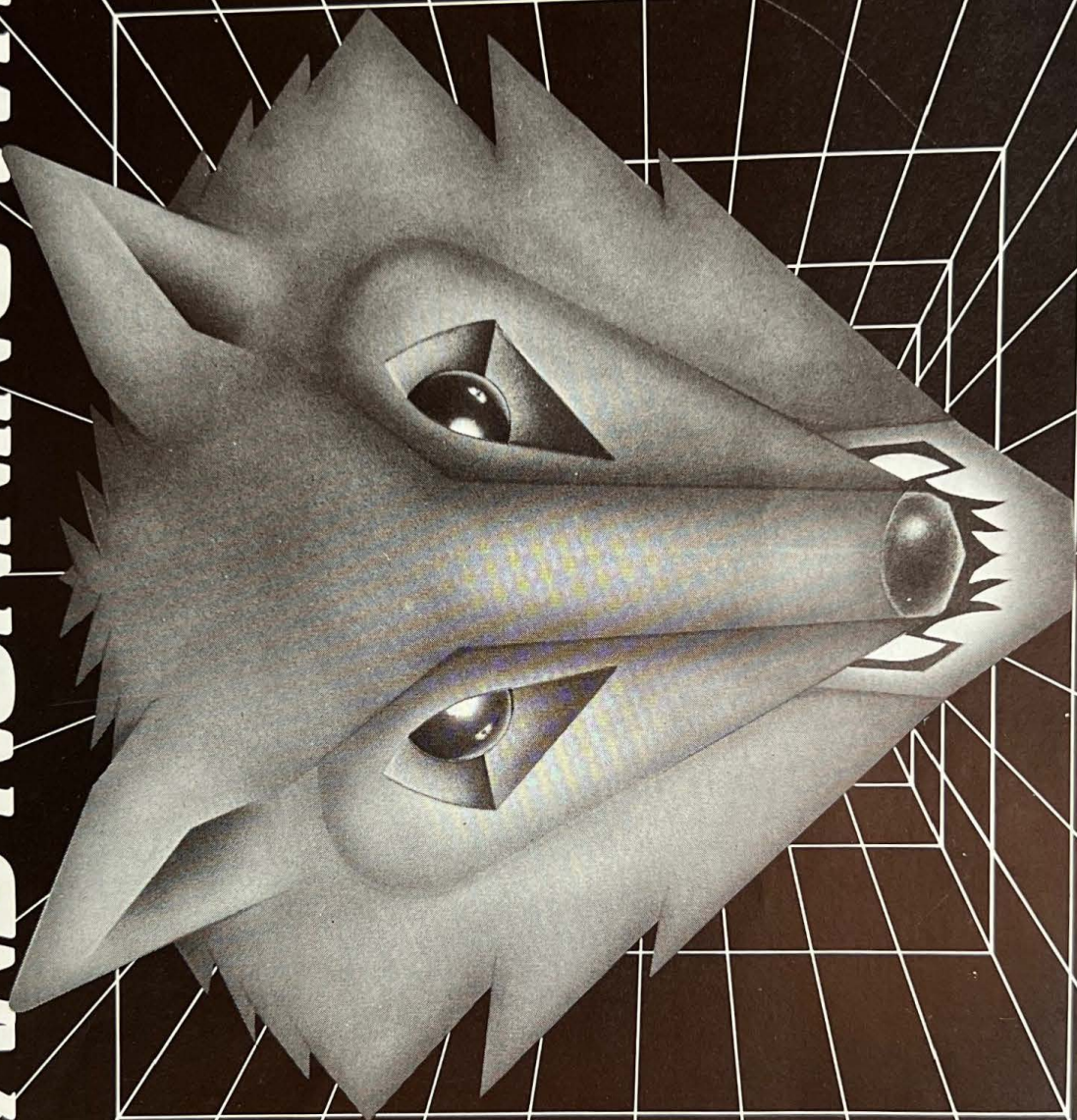
To have the dollar signs flush against the left-most digit of each number, use two dollar signs in the template instead of one, i.e., \$\$#####.##. The result is shown in Figure 5.

### Using The Comma

If you use a comma in the template, just ahead of the decimal point, it will separate every three places to the left of the decimal point. Change the template in Line 40 to #####.,## and then *RUN* to see the result, as shown in Figure 6.



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### Using The Asterisk

If you place two asterisks at the front of the template, then asterisks will be printed in all unoccupied spaces of the template. However, when you do this, you can only use one dollar sign. In Line 40, remove one dollar sign and add two asterisks in front of the remaining dollar signs and your template will now look like this: `**$#####.##`. When you *RUN* the program, the result is shown in Figure 7.

If you'd rather have the dollar sign printed ahead of the asterisks, do that in the template, so it looks like this: `$*#####.##`. The result is shown in Figure 8.

### Using The Plus And Minus Signs

Plus and minus signs can be printed ahead of, or following, a number. There is some conflict with the dollar signs and asterisks. If you use a dollar sign, use only one, and put it before anything else in the template. Asterisks clutter up this display, so leave them out.

If you use no sign at the front of the template, minus signs will be printed before those numbers that have negative values; plus signs will not be printed. If you put a plus sign (+) at the front of

the template, all numbers will show a plus or minus sign in front of them.

Placing a plus sign at the end of the template will result in plus and minus signs following all numbers. Placing a minus sign at the end of the template will result in only negative numbers followed by a minus sign.

You can test this out by putting negative signs in front of some numbers in program Line 100.

### Strings With *PRINT USING*

"Strings" (a group of characters) can be used within *PRINT USING* statements as part of the template. Try this for Line 40:

```
40 PRINT USING "Item:#####.##
Dollars";X;TAB(30)Y
```

Notice that an extra '#' is used in the template to allow a position for the negative sign added to some numbers in Line 100 (if you did so).

Much more powerful are two more signs, the exclamation point (!) and the ampersand (&), which allow you to design a template for combining strings and numbers. This can get fairly com-

plex, but Listing 2 shows three examples of *PRINT USING* with strings. Clear program memory with *NEW* and *ENTER*, then type in Listing 2.

When you *RUN* this program, the result will look like Figure 9. This certainly requires some explanation!

Line 10 of the program sets the value of string variables *A\$*, *B\$*, *C\$*, *D\$*, *E\$* and the numerical variable *X*. These are carried in memory once established, unless changed. Line 20 uses an exclamation point as the entire *PRINT USING* template. It tells the computer to *PRINT* only the first character of the designated strings. Therefore, the first line printed is *ILMSC*, the first character of each of the five strings.

Program Line 30 uses two ampersands separated by seven spaces, designating a total of nine spaces for each string, which is exactly what's printed next. Two ampersands are used for each string, with enough spaces between them to provide the proper field.

Line 40 mixes the ampersands and the '#' signs to format the last printed line. Look at this line closely and you'll learn more than most people about *PRINT USING*.



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FIGURE 8:

*****1.00	*****12.00
*****123.00	*****1,234.00
***12,345.00	***123,456.00
*****1.00	*****1.20
*****1.23	*****1.24

FIGURE 9:

ILMSC  
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I LOVE MY \$999 SANYO COMPUTER!



## CORRECTIONS

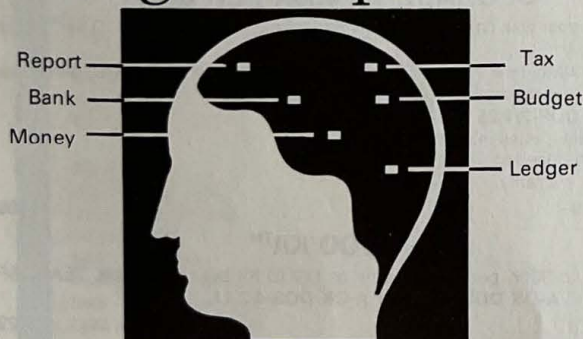
Mr. Richard Kruse has advised us that there was a small error in the article accompanying his *Keyclick Mod* program ("The Sounding Board," November '84, Page 66). Beginning in the last paragraph of Page 66, the text describes changing the frequency of the "bell" tone by modifying data at address 0040:08F6 for MS-DOS 1.25 and 0040:1246 for MS-DOS 2.11. The correct addresses should be 0040:08F9 and 0040:1249 respectively.

Readers experimenting with the incorrect addresses as

printed should have discovered that the duration of the bell tone, rather than the pitch, was affected.

Also in the November issue was Mr. Lawrence Falk's article, "Personalizing Your Prompt" (Page 14), which dealt with the MS-DOS *PROMPT* command. This command is supported only by MS-DOS Version 2.11 — not Version 1.25 — and should have been flagged more clearly. We apologize to those who spent several frustrating minutes trying to get their machines to say "Good Morning" and, instead, got only "Bad command or file name."

## The solution to a problem changes the problem

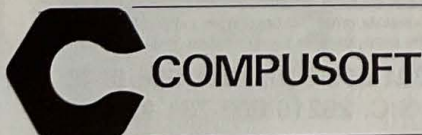


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*Last month  
we began to turn our Sanyos into  
graphics machines.  
The transformation continues . . .*

## *Sketch-It Version 2 Expanding*

If you began to get a glimpse of the graphics potential of your Sanyo by putting last month's *Sketch-It* through its paces, hold on to your seat! *Sketch-It* ushers in the new year in a flash of eight colors, 13 new commands and a completely new format that makes graphics programming on your Sanyo even easier than before! For those of you who use graphs, illustrations, or simply have a desire to be entertained, *Sketch-It* is waiting to fulfill your needs.

Last month's program was designed to introduce you to the basic operation of the *GCURSOR* command and to prepare the way for this enhanced version which would include a larger assortment of graphics capabilities. It was a basic, single-function tutorial program which, hopefully, served that purpose in addition to providing a small amount of entertainment. Since it dealt with only one command, there was ample opportunity to explain each function and to give a complete overview of the program logic. If you understood those principles you will have no trouble with this month's enhancements.

In this final version, you are going to incorporate five new commands which enable *Sketch-It* to unleash an even greater graphics ability in your Sanyo. These BASIC commands, used individually or in combinations with

varying parameters, allow the following features:

- Circles
- Semicircles
- Arcs (through any three points indicated)
- Ellipses
- Parabolas
- Squares/Rectangles
- Sketch (the original *Sketch-It* command)
- Individual Lines
- Pie Charts
- Painting
- Points
- Text (81 size combinations)
- Insert File Drawing (allows you to insert any existing drawing or pattern into a current drawing at any location and any proportionate size)
- Color (eight choices on all options)

To accomplish all this, the program listing has grown and some fundamental changes have been made. Predominate among these changes is an increase in the file record length which is written to the disk. The *LINE(X1,Y1)-(X2,Y2)* command, which the first version of *Sketch-It* utilized, required that we only store four individual numbers in the disk file. These numbers represented the X and Y coordinates of two points which had been connected with a line. This month's new commands still require the coordinates of a point or points, but in some cases require additional information. An example of this extra data would be the size of the radius to use when drawing a circle, or the color of paint to use when filling in an object you have drawn on the screen.

How do these changes affect your drawings created using Version 1? Well, due to the different file lengths stored on the disk, pictures drawn using the original version cannot be read by

Version 2. However, by typing in the separate program in Listing 3, your existing drawings will be automatically converted into the new record size, which can then be read by Version 2. Once you have typed in and saved Listing 3, *RUN* it and you will be asked for the names of the picture files you want to convert. Simply typing in the names, one at a time as you are asked, is all you need do to continue those drawings with the new *Sketch-It* graphics functions.

Once again, only standard Sanyo BASIC commands are used in the same simple, straightforward style of the original *Sketch-It*. There are some cases in which the actual mathematics used to compute the X and Y locations may appear a bit overwhelming. I would suggest that they be initially overlooked in favor of observing just how the various commands respond when they are given the different values. Of particular interest is the *CIRCLE* command. This one command will draw circles, arcs, ellipses, parabolas, semicircles and much more. By simply changing one value (see the *CIRCLE* command description in your *Sanyo Operator's Guide*), this same command even creates pie chart wedges for graphs and business applications.

In the sections that follow I will give a brief explanation of how the program code works and what to expect when it is run.

### **Introduction And Setup**

This section of code is very similar to the original version with the addition of one space-saving command used in place of the *INKEY\$* function. Line 105 contains the command *!\$INPUT\$(1)*. This allows you to limit the input received from the keyboard to a specific number of characters. By placing the



*(Dan Webber began his association with microcomputing in 1978 and is currently completing a degree in mechanical engineering at the University of Missouri in Rolla, Mo.)*





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Last month  
we began to turn our Sanyos into  
graphics machines.  
The transformation continues . . .

## Sketch-It Version 2 Expanding

If you began to get a glimpse of the graphics potential of your Sanyo by putting last month's *Sketch-It* through its paces, hold on to your seat! *Sketch-It* ushers in the new year in a flash of eight colors, 13 new commands and a completely new format that makes graphics programming on your Sanyo even easier than before! For those of you who use graphs, illustrations, or simply have a desire to be entertained, *Sketch-It* is waiting to fulfill your needs.

Last month's program was designed to introduce you to the basic operation of the *GCURSOR* command and to prepare the way for this enhanced version which would include a larger assortment of graphics capabilities. It was a basic, single-function tutorial program which, hopefully, served that purpose in addition to providing a small amount of entertainment. Since it dealt with only one command, there was ample opportunity to explain each function and to give a complete overview of the program logic. If you understood those principles you will have no trouble with this month's enhancements.

In this final version, you are going to incorporate five new commands which enable *Sketch-It* to unleash an even greater graphics ability in your Sanyo. These BASIC commands, used individually or in combinations with

varying parameters, allow the following features:

- Circles
- Semicircles
- Arcs (through any three points indicated)
- Ellipses
- Parabolas
- Squares/Rectangles
- Sketch (the original *Sketch-It* command)
- Individual Lines
- Pie Charts
- Painting
- Points
- Text (81 size combinations)
- Insert File Drawing (allows you to insert any existing drawing or pattern into a current drawing at any location and any proportionate size)
- Color (eight choices on all options)

To accomplish all this, the program listing has grown and some fundamental changes have been made. Predominate among these changes is an increase in the file record length which is written to the disk. The *LINE(X1,Y1)-(X2,Y2)* command, which the first version of *Sketch-It* utilized, required that we only store four individual numbers in the disk file. These numbers represented the X and Y coordinates of two points which had been connected with a line. This month's new commands still require the coordinates of a point or points, but in some cases require additional information. An example of this extra data would be the size of the radius to use when drawing a circle, or the color of paint to use when filling in an object you have drawn on the screen.

How do these changes affect your drawings created using Version 1? Well, due to the different file lengths stored on the disk, pictures drawn using the original version cannot be read by

Version 2. However, by typing in the separate program in Listing 3, your existing drawings will be automatically converted into the new record size, which can then be read by Version 2. Once you have typed in and saved Listing 3, *RUN* it and you will be asked for the names of the picture files you want to convert. Simply typing in the names, one at a time as you are asked, is all you need do to continue those drawings with the new *Sketch-It* graphics functions.

Once again, only standard Sanyo BASIC commands are used in the same simple, straightforward style of the original *Sketch-It*. There are some cases in which the actual mathematics used to compute the X and Y locations may appear a bit overwhelming. I would suggest that they be initially overlooked in favor of observing just how the various commands respond when they are given the different values. Of particular interest is the *CIRCLE* command. This one command will draw circles, arcs, ellipses, parabolas, semicircles and much more. By simply changing one value (see the *CIRCLE* command description in your *Sanyo Operator's Guide*), this same command even creates pie chart wedges for graphs and business applications.

In the sections that follow I will give a brief explanation of how the program code works and what to expect when it is run.

### Introduction And Setup

This section of code is very similar to the original version with the addition of one space-saving command used in place of the *INKEY\$* function. Line 105 contains the command *ISINPUT\$(1)*. This allows you to limit the input received from the keyboard to a specific number of characters. By placing the



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# The Window

By Dan Webber

number '1' inside the parentheses, the Sanyo will wait patiently until one key is depressed, then continue normally. If two characters were wanted, a '2' would permit the pressing of two keys before the program proceeded to the next line.

## Prepare Screen For Drawing

This section of the program has been slightly rearranged if you compare it with the first version, but with the exception of the use of `INPUT$(x)` it operates in exactly the same fashion as originally introduced.

## Open Files To Draw Or Redraw

Line 200 begins this operation by calling a subroutine to obtain the filename of the drawing with which you want to work. This subroutine, along with any others which we will reference from time to time will be described later. Concerning the file handling routines that follow, it is best that an in-depth description of random file operations be left for you to obtain from other sources. What is important for now is that lines 205 to 215 prepare your disk to store or retrieve the information that represents your pictures created using *Sketch-It*. Line 220 then prepares a second file to hold any text that you may want to include in your graph or drawing.

## Sketch-It Program Control

The first few lines are almost identical to those found in the original version. Line 270 begins by setting variables used in the program to zero, or "null" in the case of character variables. Lines 275 to 290 print the new options menu. If you are careful in getting the spacing correct on Line 275, when you run the program you should see a menu which has the "key" letter of each command

choice highlighted in a bright color. If your spacing is off and you have bright letters overprinting command words, this is the line to adjust. Line 310 waits for you to select a command from the list and then branches to the program section that corresponds to that command function. Selecting the "Arc" option will display a new menu of circle related commands. This menu is constructed in lines 370 to 375 and again uses the "highlighting" method to indicate which character to depress on the keyboard to select a program option.

## Box

These few lines are all that are necessary in *Sketch-It* to create any size, shape or color of box that can be displayed on your monitor. The subroutine in Line 1440 requests the two diagonal corners using the `GCURSOR` command. The box is then drawn by Line 445 using the `LINE` command with a `B` designation at its end. The variable `KOLOR` contains the color information to be used when drawing. Line 450 calls the subroutine which stores the box just drawn to the disk file, then `GOTO 440` repeats the entire procedure.

To exit from the box drawing routine, and most others for that matter, you must press the return key twice without moving the cross hairs that are shown on your screen. While this may take some getting used to at first, it is much faster and easier than being forced to return to the main menu each time you need to draw multiple objects of the same type.

## Dots, Or Points

This program area will turn on the individual pixels of your monitor. The call to subroutine 1500 displays a color menu at the bottom of the screen and

allows you to choose the color of dots, or points, to be made. Using `GCURSOR`, you then indicate where to put the point on the screen and this information is passed along to the `PSET` command in Line 475 which actually draws the point. You may *not* make a dot at the initial position of the cross hairs when they are first displayed. This is understood by *Sketch-It* to mean that you are finished with this option and ready to return to the main menu.

## Erase Last Figure Drawn

This section of the program allows you to erase from both the screen and disk file. As each object is erased it will be removed from your monitor display. Repeated erase commands will sequentially remove objects drawn, allowing erasures of previous figures from existing filed drawings. Erasure is prohibited only in the case of an "Inserted" drawing, as this function requires related pairs of `VIEW` commands. Accidental erasure of one member of this pair could cause total havoc when redrawing a file from disk. For this reason, once you insert a drawing or pattern, you will be unable to correct any figures drawn prior to that time.

## Insert File Drawing

This program module is possibly the most complex in *Sketch-It*. When you select this option, *Sketch-It* will ask you to identify an area to contain the drawing you want to insert. This is done by indicating opposite diagonal corners as you would in drawing a box or a rectangle. A filename is then requested and, if it exists, it will be redrawn in





the specified location in a size proportional to the area you have defined. Line 550 contains an *ON ERROR GOTO* statement which will override any situation normally producing an error in a BASIC program. In this specific case we are concerned about mistyping a filename. If this routine was not included and a name was given for a file which did not exist, the screen would scroll and the program would break, displaying an error message. To avoid this confusion, the program is instead routed to Line 615, which prints the message "There are no *Sketch-It* files . . . on this disk." After waiting

November 1984 issue of *SOFT SECTOR*. The article "Personalizing Your Prompt," by Lawrence C. Falk, gives us a perfect way to facilitate loading *Sketch-It* by use of a "Batch" file (under MS-DOS 2.11). In this case the lines to type in from the MS-DOS prompt *A>* would be:

```
COPY CON:SKETCH.BAT
BASIC"SKETCH.BAS" /F:4
```

Press CTRL and the letter 'Z' at the same time, then ENTER. This enables you to load *Sketch-It* straight from DOS by simply typing the word

*"Sketch-It ushers in the new year in a flash of eight colors, 13 new commands and a completely new format that makes programming on your Sanyo even easier than before!"*

a few seconds, control is returned to Line 540 and the filename is requested again. In order to cancel the error handling routine once our specific use of it is over, *ON ERROR GOTO 0* is included in Line 600.

Inspection of the file handling routines in Lines 555 through 605 will disclose that *Sketch-It* first stores the *VIEW* selection and then transfers a copy of each file command, one by one, from the inserted drawing into the current drawing. If a file being inserted contains text, there is a need to open an additional file. All in all this means that it may be necessary for your Sanyo to manipulate four files simultaneously. Under normal default values the MBC-550 will handle only three files at one time. Since this is not satisfactory, new parameters must be specified at the time *BASIC.EXE* is initially loaded. This procedure is explained on Page 3-3 of your *Operator's Guide*. Trying to remember the correct syntax every time you want to run *Sketch-It*, however, could become quite annoying! The obvious solution is to let the Sanyo itself provide the correct syntax for us.

Before you run *Sketch-It* for the first time, take a glance at a helpful bit of information which was presented in the

*SKETCH*, just as you would for *Word-Star* or any *.EXE* or *.COM* file.

Lastly, a drawing you are creating may contain an unlimited number of patterns or inserted drawings. However, it is not recommended that you insert drawings which themselves contain inserted drawings.

#### Sketch Continuous Lines

This is the original version of *Sketch-It*. Other than the use of a subroutine to obtain the X and Y coordinates, nothing here has changed.

#### Individual Lines

This feature was added to enable a user to draw multiple lines on the screen without having to repeatedly exit and reenter the "Continuous" line mode.

#### Paint

This is the most popular program option, and yet the most restrictive, in the *Sketch-It* program. The *PAINT* command requires that you tell it the color of the lines bordering the object you want to paint. These lines must be all of the *same* color. If you tell it to paint a box drawn with blue lines, any figure inside that box that has been drawn in any color other than blue will

be "painted over" and, in effect, disappear from your screen. For this reason, *Sketch-It* uses a default color when drawing all objects. This insures that a figure drawn will not be over-painted by mistake. An unfortunate consequence of this arises if you attempt to erase an area which you have painted using the default border color.

*Sketch-It* erases by simply redrawing the object, or repainting the area, using the color black. This gives the appearance of removing the figure from the display screen. If you attempt to repaint an area which has been painted using the default border color, the *PAINT* command is immediately confused into thinking that it has already reached the objects boundaries and it refuses to paint anything at all.

It is important to realize, however, that even though you will still see the area painted on the screen, the original *PAINT* command *has been removed from the disk file*. If the figure is redrawn, the painted area will not be included.

In the current listing the default color has been chosen as purple. This allows the remaining major colors to be used with ease under normal drawing conditions.

#### Text Entry

This section of the program utilizes the *SYMBOL* command, allowing text to be included in a multitude of sizes, colors and orientations. A good explanation of how this is actually accomplished is found in your *Operator's Guide* on pages 3-118 and 3-119. Using *Sketch-It*, you will first be asked to enter the text message you want to display. Your text may contain any alphabetic character or special graphics character that can be entered using the keyboard. If you attempt to enter a text message greater than 50 characters in length, it will be immediately truncated. You must then complete the entire procedure of placing and accepting the location before you are allowed to delete it using the standard "Erase" option. This is also true in the case of misspellings if you have progressed beyond the "TEXT:" prompt.

Once you have entered your text, you will be asked to select a display color and horizontal and vertical magnification. Size one is the standard size that you normally see on your display. Different size combinations will produce the effect of creating different type styles.



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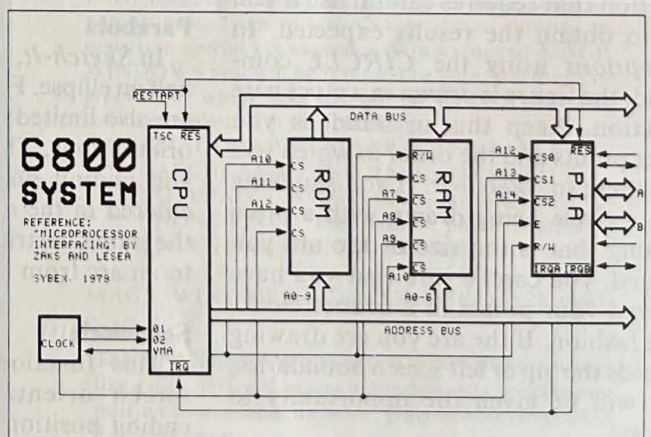
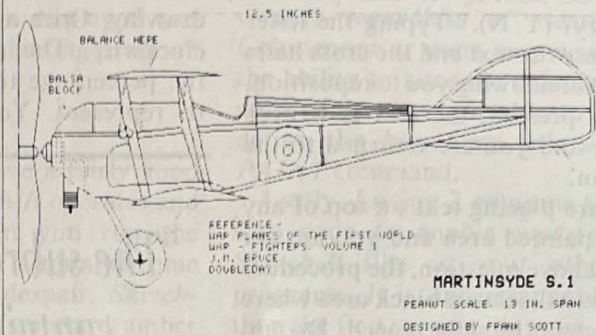
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The next message will ask for the "orientation" to be used in placing your text. Number 1 is normal, 2 is rotated 90 degrees, 3 is upside down and 4 is 270 degrees. You are not allowed to print any text that would exceed the top or left limits of your screen. On the other hand, text may disappear off to the right or bottom. *Sketch-It* takes this into consideration by allowing you to move your text around on the screen before you finally approve the final location. Each time the text is placed you will be asked, "Is this position satisfactory? (Y/N)." Typing the letter 'N' will erase the text and the cross hairs will reappear allowing you to reposition. If a 'Y' is pressed, the text is written to the file and you are returned to the main menu.

If you are placing text on top of any object or painted area and you answer 'N' to the above question, the procedure for erasure will leave a black area where the text was originally placed. Do not be alarmed; this will not appear when redrawing from the file record.

#### Save Drawing To Disk

This portion of the program saves your new drawing, or updates the existing file drawing if you made any additions or changes during the session on *Sketch-It*. Line 820 checks to see if you added text. If not, the text file that would accompany your picture file is destroyed in order to preserve disk storage space.

#### Arc From Three Points

This is an extremely versatile program function that requires careful use if you are to obtain the results expected. In *all options* using the *CIRCLE* command, the figure is drawn in a clockwise direction. Keep this in mind as you select points and the order in which you give them to *Sketch-It*. If you suddenly find a circle being drawn with a piece missing that is the size of the arc you wanted, you can be sure that you have entered your points in a counterclockwise fashion. If the arc you are drawing exceeds the top or left screen boundaries, you will be given the opportunity to redraw.

#### Circle

This option will draw a complete circle after asking you to indicate the center point and radius.

#### Ellipse

This variation of the *CIRCLE* command will allow the drawing of hori-

zontal or vertical ellipses. Angularly oriented ellipses are not supported by the circle command. To draw an ellipse using *Sketch-It*, you must first specify the center and then the horizontal and vertical extremes.

#### Pie Chart Wedges

This is the option that most remarkably demonstrates the versatility of the *CIRCLE* command. *Sketch-It* will prompt you to indicate a center, or "point," for the wedge and a position on the outer rim from which to begin drawing. Once again, the arc is drawn clockwise. The next prompt requests the percentage total that the wedge is to represent. Your *Operator's Guide*

---

*"The subroutine section  
contains the real  
workhorses of the  
program. Each one is a  
miniature program all in  
itself..."*

---

gives a description of the *CIRCLE* command and all its variations on pages 3-109 through 3-111.

#### Parabola

In *Sketch-It*, a parabola is really only half an ellipse. For this reason, parabolas are also limited to vertical or horizontal orientations. The locations for starting and ending points of a parabola are entered in the same fashion and under the same restrictions as those related to an arc from three points.

#### Semicircle

This function will operate in any screen orientation. Beginning and ending positions are entered using the *GCURSOR* command and the center point and radius are automatically calculated. A semicircle is then drawn connecting the end points.

**T**his completes a very brief description of each command and mentions some of the things to watch out for when running the program. One menu

selection not mentioned is the "Color" option. Selecting a color from the displayed color chart before beginning to draw a box, circle, etc., will temporarily replace the default color. This can be most helpful if you need only to erase a portion of a line that is not consistent with your drawing. This change of default color is temporary, but will remain in effect until you return to the main menu and select another entity type. Be careful when drawing using any other color than purple. Remember the limitations of the *PAINT* command!

The subroutine section contains the real workhorses of the program. The nicest thing about subroutines is their portability. Each one is a miniature program all in itself which can often be moved from one program to another with only minor changes.

#### Text Entry

This subroutine, which handles the text input for *Sketch-It*, will accept input from the keyboard and allow the use of the "backspace" (ASCII 8), the RETURN (ASCII 13) or the ESC (ASCII 27) keys. The variable *MAX* will allow you to limit the text length which can be input if you need to. If not, define it to be a number larger than you expect to use.

#### Draw Grid

This subroutine draws a grid to assist in freehand drawing if it is desired.

#### Redraw From File

This is the location where the redrawing of *Sketch-It* files is done. Additionally this portion handles the "Erase" function by simply setting the value of *KOLOR* to black and redrawing the figure. This is also the major portion of code needed to reproduce any of your *Sketch-It* drawings in other BASIC programs.

#### Get X and Y Coordinates For Graphics Commands

This is the subroutine which obtains the screen locations for all functions which use the *GCURSOR* command.

#### Clear Message Line

This one line subroutine clears the message/prompt line on the video terminal and relocates the cursor.

#### Select Color

These lines produce a color chart across the bottom of the screen. The actual selection is made in the following



subroutine, which is called by this color subroutine.

### Numeric Input And Checking Routine

This line of code will accept numeric input and check to make sure that it is between an upper and lower boundary described by the variables *MAX* and *MIN*.

### Write To Disk File

This is the program section that actually writes each command to the disk file.

### Update File Record

This area recopies corrections or additions made to your *Sketch-It* files.

### Text File Manipulation

When text is stored in a random file, it is placed in a "field" of a specific length. In this case the field has been defined to be 50 characters. If your text message contains less than 50 characters, the Sanyo will attach a calculated quantity of spaces needed to equal 50 before storing it to disk. This makes it necessary to strip off those extra spaces before reprinting the message on

the screen. This subroutine checks each character and removes any blank spaces that were attached to the end.

### Find Beginning And Ending Arc Positions

This subroutine is used in calculations for the semicircle and the arc routines.

### Message Timer For Error

This is the subroutine which is called by the *ON ERROR GOTO* routines associated with creation of arcs and circles. The message is displayed and then returns to the originating program section.


**Y**ou should now have a fairly good idea of how *Sketch-It* operates and what to expect when you run the program. If you are a monochrome monitor user, do not despair. *Sketch-It* was written using a standard amber screen (hence, the choice of purple for a drawing color!). If your display flashes when you run this program, you need to change the switch settings that control the color translation for monochrome monitors. This is mentioned in

the premiere issue of *SOFT SECTOR* on Page 56. The procedure is very simple and takes only a few seconds. What you must do is locate the DIP switch assembly marked DTS-4 and set switch number one to the "on" position and the remaining three to "off." If this is not done, *Sketch-It* will not perform up to expectations, as several color patterns are altered and others are nonexistent.

The commands *GET* and *PUT* are options intentionally left out in order to accommodate all Sanyo MBC-550 owners regardless of memory size. Color monitor users may want to add the ability to alter the default drawing color since they are able to correctly define the boundary colors for the *PAINT* command.

Lastly, Listing 2 contains the necessary code to enable you to redraw *Sketch-It* files in your other BASIC programs. It is understandably longer than the first version, but may be saved as a program all in itself and then *MERGED* with your other programs as it is needed.

You are now ready to start this new year off right with a "new look," courtesy of your Sanyo.



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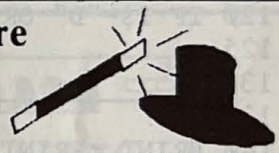
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# LISTING 1: SKETCH-IT

```
5 ' *****
10 ' *
15 ' * SKETCH-IT Ver.2 Hi-Resolution Graphics For *
20 ' * SANYO MBC 550 *
25 ' * *
30 ' * November 10, 1984 *
35 ' * *
40 ' * Dan Webber Galen Oellig *
45 ' * 314-364-3404 *
50 ' * 1206 Maple / Rolla, MO 65401 *
55 ' *****
60 :
65 ' INTRODUCTION AND SET-UP
70 :
75 CLS
80 LOCATE 1,1,0
85 B$=STRING$(78,32):LINE (0,190)-(639,190),5
90 SYMBOL(80,10), "Welcome to SKETCH-IT",3,3,6
95 LOCATE 7,16
100 PRINT "Do you want to VIEW or DRAW or QUIT ?"
105 I$=INPUT$(1)
110 IF I$="V" OR I$="v" THEN SEE=1:GOTO 180
115 IF I$="Q" OR I$="q" THEN CLS:END
120 IF I$="D" OR I$="d" THEN 140:ELSE 105
125 :
130 ' PREPARE SCREEN FOR DRAWING
135 :
140 PRINT :PRINT "Do you want a grid overlay on the screen? (Y/N)"
145 I$=INPUT$(1):IF I$="Y" OR I$="y" THEN GRID=-1 ELSE GRID=0
150 :
155 PRINT :PRINT "Will this be a NEW drawing or an EXISTING drawing ?"
160 I$=INPUT$(1)
165 IF I$="n" OR I$="N" THEN 200
170 IF I$="e" OR I$="E" THEN 180
175 GOTO 160
180 EXISTING=1
185 PRINT :PRINT "SKETCH-IT files on this disk are:":PRINT
190 FILES "*. "
195 ' OPEN FILES TO DRAW OR REDRAW
200 MSG1$="Enter file name (maximum 8 characters):":MAX=8:GOSUB 1240:FILE$=TXT$
205 OPEN "R",#1,FILE$,20
210 FIELD #1,2 AS OBJ$,2 AS X1$,2 AS Y1$,2 AS X2$,2 AS Y2$,2 AS KOLOR$,4 AS REAL
1$,4 AS REAL2$
215 RECORD=LOF(1)/20
220 OPEN "R",#3,FILE$+".txt",50:FIELD #3,50 AS TEXT$
225 :
230 ' SKETCH-IT PROGRAM CONTROL
235 CLS:LINE (0,190)-(639,190),5
240 IF GRID=-1 THEN GOSUB 1290
245 IF EXISTING=1 THEN START=1:FINISH=RECORD:GOSUB 1325
250 IF SEE <> 1 THEN 270
255 GOSUB 1485:PRINT"Press any key to erase screen and return to opening menu.";
```



```

260 I$=INPUT$(1):IF LOF(3)=0 THEN CLOSE:KILL FILE$+".txt":RUN:ELSE CLOSE:RUN
265 :
270 LOCATE 25,1:PRINT B$;:QT=0:X0=320:Y0=100:MSG1$="":MSG2$="":MSG3$="":KOLOR=5
275 LOCATE 25,1:PRINT " rc ox olor ot rase nsert setch ine
aint ext ave";
280 COLOR 6:LOCATE 25,1:PRINT "A";TAB(7)"B";TAB(13)"C";TAB(20)"D";TAB(26)"E";
285 PRINT TAB(34);"I";TAB(44)"K";TAB(52)"L";TAB(59)"P";TAB(67)"T";TAB(74)"S";
290 COLOR 2
295 :
300 I$=INPUT$(1)
305 IF I$="A" OR I$="a" THEN 370
310 IF I$="B" OR I$="b" THEN OBJ=1:GOTO 430
315 IF I$="C" OR I$="c" THEN GOSUB 1485:GOSUB 1495:GOTO 275
320 IF I$="D" OR I$="d" THEN OBJ=2:GOTO 465
325 IF I$="E" OR I$="e" THEN 495
330 IF I$="I" OR I$="i" THEN OBJ=3:GOTO 530
335 IF I$="K" OR I$="k" THEN OBJ=4:GOTO 635
340 IF I$="L" OR I$="l" THEN OBJ=5:GOTO 670
345 IF I$="P" OR I$="p" THEN OBJ=6:GOTO 700
350 IF I$="T" OR I$="t" THEN OBJ=7:GOTO 730
355 IF I$="S" OR I$="s" THEN OBJ=8:GOTO 815
360 GOTO 270
365 :
370 GOSUB 1485:PRINT" rc from three points circle ellipse P e slice ara
bola emi-circle";
375 COLOR 6:LOCATE 25,1:PRINT "A";TAB(25)"C";TAB(34)"E";TAB(45)"I";TAB(56)"P";TA
B(67)"S";:COLOR 2
380 I$=INPUT$(1)

```



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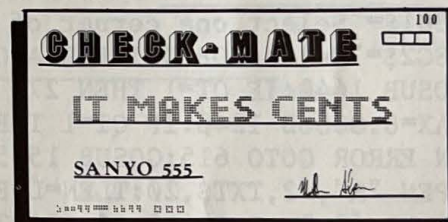
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```

385 IF I$="A" OR I$="a" THEN OBJ=9:GOTO 840
390 IF I$="C" OR I$="c" THEN OBJ=10:GOTO 915
395 IF I$="E" OR I$="e" THEN OBJ=11:GOTO 965
400 IF I$="I" OR I$="i" THEN OBJ=12:GOTO 1025
405 IF I$="P" OR I$="p" THEN OBJ=13:GOTO 1095
410 IF I$="S" OR I$="s" THEN OBJ=14:GOTO 1165
415 GOTO 270
420 :
425 ' BOX
430 MSG1$="Indicate one corner of BOX to be drawn."
435 MSG2$="Indicate OPPOSITE DIAGONAL CORNER of BOX."
440 GOSUB 1440:IF QT=1 THEN 270
445 LINE (X1,Y1)-(X2,Y2),KOLOR,B
450 GOSUB 1545:GOTO 440
455 :
460 ' DOT OR POINTS
465 GOSUB 1485:GOSUB 1500:PRINT "Select DOT location to color.";
470 GCURSOR (X0,Y0),(X1,Y1),2:IF X1=X0 AND Y1=Y0 THEN 270
475 PSET (X1,Y1),KOLOR
480 GOSUB 1545:X0=X1:Y0=Y1:GOTO 470
485 :
490 ' ERASE LAST FIGURE DRAWN
495 IF RECORD<1 THEN 270 ELSE ERSE=1:START=RECORD:FINISH=RECORD:GOSUB 1320
500 IF OBJ<>3 THEN 515 ELSE VIEW (0,0)-(639,199):GOSUB 1485
505 PRINT "This begins an INSERTed file drawing, no further erasures are allowed
.";
510 FOR T=1 TO 1500:NEXT T:GOTO 270
515 RECORD=RECORD-1:ERSE=0:GOTO 270
520 :
525 ' INSERT FILE DRAWING
530 MSG1$="Select one corner of area in which to insert file drawing."
535 MSG2$="Select OPPOSITE DIAGONAL CORNER of area for insert."
540 GOSUB 1440:IF QT=1 THEN 270 ELSE MSG1$="Name of file drawing to insert."
545 MAX=8:GOSUB 1240:IF QT=1 THEN 270
550 ON ERROR GOTO 615:GOSUB 1545:START=RECORD
555 OPEN "R",#2,TXT$,20:TLEN=LOF(2)/20
560 FIELD #2,2 AS A1$,2 AS A2$,2 AS A3$,2 AS A4$,2 AS A5$,2 AS A6$,4 AS A7$,4 AS
A8$
565 OPEN "R",#4,TXT$+".txt",50:FIELD #4, 50 AS R$
570 FOR X=1 TO TLEN:GET #2,X
575 LSET OBJ$=A1$:LSET X1$=A2$:LSET Y1$=A3$:LSET X2$=A4$:LSET Y2$=A5$
580 LSET KOLOR$=A6$:LSET REAL1$=A7$:LSET REAL2$=A8$
585 Q=CVI(OBJ$):IF Q <>7 THEN 595 ELSE R=CVS(REAL2$):GET #4,R
590 LSET TEXT$=R$:PUT #3,LOF(3)/50+1:LSET REAL2$=MKS$(LOF(3)/50)
595 LSET OBJ$=MKI$(Q):PUT #1,RECORD +X
600 NEXT X:ON ERROR GOTO 0:CLOSE #2:CLOSE #4
605 RECORD=RECORD+X-1:OBJ=3:X1=0:Y1=0:X2=639:Y2=199:GOSUB 1545:FINISH=RECORD
610 GOSUB 1325:GOTO 270
615 GOSUB 1485:PRINT "There are no SKETCH-IT files on this disk with this name."
;
620 FOR T=1 TO 1000:NEXT T:GOSUB 1485:RESUME 545
625 :
630 ' SKETCH CONTINUOUS LINES
635 MSG1$="Select an initial point from which to begin drawing"
640 MSG2$="Press <ENTER> twice to stop drawing this figure.":GOSUB 1440
645 IF QT=1 THEN 270
650 LINE (X1,Y1)-(X2,Y2),KOLOR
655 GOSUB 1545:X1=X2:Y1=Y2:GOSUB 1450:GOTO 645
660 :

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665 ' INDIVIDUAL LINES
670 MSG1$="Select a begining position for the line to be drawn."
675 MSG2$="Select the ending position for the line to be drawn."
680 GOSUB 1440:IF QT=1 THEN 270
685 LINE (X1,Y1)-(X2,Y2),KOLOR:GOSUB 1545:GOTO 680
690 :
695 ' PAINT
700 GOSUB 1485:GOSUB 1500:PRINT "Select area/object to be PAINTed.";
705 GCURSOR (X0,Y0),(X1,Y1),2:IF X1=X0 AND Y1=Y0 THEN 270
710 PAINT (X1,Y1),KOLOR,5
715 GOSUB 1545:X0=X1:Y0=Y1:GOTO 705
720 :
725 ' TEXT ENTRY
730 MAX=50:MSG1$="TEXT: ":GOSUB 1485:GOSUB 1240:GOSUB 1485:GOSUB 1500:GOSUB 1485
735 PRINT"Horizontal magnification: (1-9) ";:MIN=1:MAX=9:GOSUB 1530:X2=I:GOSUB 1
485
740 PRINT"Vertical magnification: (1-9) ";:MIN=1:MAX=9:GOSUB 1530:Y2=I:GOSUB 148
5
745 PRINT"Text rotation: 1- none 2- 90 deg 3- 180 deg 4- 270 deg :";
750 MAX=4:MIN=1:GOSUB 1530:REAL1=I-1:GOSUB 1485
755 PRINT "Select position for TOP LEFT CORNER of leading character.";
760 GCURSOR (X0,Y0),(X1,Y1),2
765 ON ERROR GOTO 795
770 SYMBOL (X1,Y1),TXT$,X2,Y2,KOLOR,REAL1
775 GOSUB 1485:PRINT "Is this position sastifactory ? (Y/N) ";
780 I$=INPUT$(1):IF I$<>"Y" AND I$<>"y" THEN 790
785 GOSUB 1610: GOTO 270
790 GOSUB 1485:SYMBOL (X1,Y1),TXT$,X2,Y2,0,REAL1:X0=X1:Y0=Y1:GOTO 755
795 GOSUB 1485:PRINT "Your text has gone out of range. Nothing has been stored
to disk";
800 FOR T=1 TO 1500:NEXT T:RESUME 270
805 :
810 ' SAVE DRAWING TO DISK
815 IF WIPE=1 THEN GOSUB 1570
820 IF LOF(3)=0 THEN CLOSE #3:KILL FILE$+".txt"
825 CLOSE:RUN
830 :
835 ' ARC FROM THREE POINTS
840 MSG1$="Enter begining point of arc":MSG2$="Enter ending point for arc (clock
wise) "
845 MSG3$="Indicate a third point between the first two"
850 GOSUB 1440:IF QT=1 THEN 270
855 X0=X2:Y0=Y2:Y1=1.97*Y1:Y2=1.97*Y2:Y3=1.97*Y3
860 A1=2*(X1-X2):B1=2*(Y1-Y2):K1=X1^2-X2^2+Y1^2-Y2^2
865 A2=2*(X3-X2):B2=2*(Y3-Y2):K2=X3^2-X2^2+Y3^2-Y2^2
870 D=A1*B2-A2*B1:IF D=0 THEN GOSUB 1485:GOTO 850
875 XC=(K1*B2-K2*B1)/D+.5:YC=(A1*K2-A2*K1)/D+.5
880 GOSUB 1625:X1=XC:Y1=YC/1.97:X2=RAD:REAL1=START:REAL2=FINISH
885 ON ERROR GOTO 900
890 CIRCLE (X1,Y1),X2,REAL1,REAL2,.508,KOLOR
895 ON ERROR GOTO 0:GOSUB 1545 :GOTO 850
900 GOSUB 1665:RESUME 850
905 :
910 ' CIRCLE
915 MSG1$="Select center point of circle to be drawn"
920 MSG2$="Indicate a point on the circumference"
925 GOSUB 1440:IF QT=1 THEN 270
930 REAL1=SQR((X2-X1)^2+((Y2-Y1)/.508)^2)
935 ON ERROR GOTO 950

```





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940 CIRCLE (X1,Y1),REAL1,,,KOLOR
945 ON ERROR GOTO 0:GOSUB 1545:GOTO 925
950 GOSUB 1665:RESUME 925
955 :
960 ' _____ ELLIPSE _____
965 MSG1$="Enter center of ellipse":MSG2$="Enter horizontal extreme"
970 MSG3$="Enter vertical extreme"
975 GOSUB 1440:IF QT=1 THEN 270
980 IF X2=X1 OR Y3=Y1 THEN GOTO 975
985 X2=ABS(X1-X2):Y2=ABS(Y1-Y3):REAL1=Y2/X2:X0=X1:Y0=Y1
990 IF Y2>X2 THEN X2=Y2
995 ON ERROR GOTO 1010
1000 CIRCLE (X1,Y1),X2,,,REAL1,KOLOR
1005 ON ERROR GOTO 0:GOSUB 1545:GOTO 975
1010 GOSUB 1665:RESUME 975
1015 :
1020 ' _____ PIE CHART WEDGES _____
1025 MSG1$="Select center of chart or point of wedge"
1030 MSG2$="Select starting position on edge (wedge will be drawn clockwise)"
1035 GOSUB 1440:IF QT=1 THEN 270
1040 MSG1$="Enter percentage of total that the wedge is to represent. (1-100)"
1045 MAX=2:GOSUB 1240:I=VAL(TXT$):IF I=0 THEN 1045 ELSE I=I/100
1050 DX=X2-X1:DY=(Y2-Y1)*1.97:X2=SQR(DX^2+DY^2):GOSUB 1635
1055 REAL1=THETA:REAL2=THETA+I:IF REAL2>1 THEN REAL2=REAL2-1
1060 REAL1=INT((REAL1*100)+.5)/100:REAL2=INT((REAL2*100)+.5)/100
1065 ON ERROR GOTO 1080:REAL1=-REAL1:REAL2=-REAL2
1070 CIRCLE (X1,Y1),X2,REAL1,REAL2,.508,KOLOR
1075 GOSUB 1545:GOTO 1025

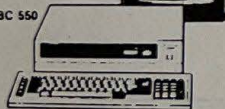
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CRT 36

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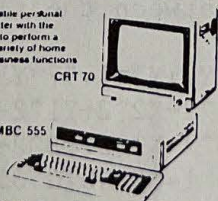
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1080 GOSUB 1665:RESUME 1025
1085 :
1090 ' _____ PARABOLA _____
1095 MSG1$="Enter the first endpoint of parabola"
1100 MSG2$="Enter the second endpoint (will be drawn clockwise)"
1105 MSG3$="Enter extreme for parabola"
1110 GOSUB 1440: IF QT=1 THEN 270
1115 IF X1=X2 OR Y1=Y2 THEN 1120 ELSE 1110
1120 X0=X2:Y0=Y2:XC=(X1+X2)/2:YC=(Y1+Y2)/2
1125 IF Y1=Y2 THEN XDIST=ABS(XC-X1):YDIST=ABS(Y3-YC): IF Y3>Y1 THEN START=0 ELSE
    START=.5
1130 IF X1=X2 THEN XDIST=ABS(XC-X3):YDIST=ABS(YC-Y1): IF X3>X1 THEN START=.75 EL
SE START=.25
1135 FINISH=START+.5 :IF FINISH>1 THEN FINISH=FINISH-1
1140 REAL1=YDIST/XDIST:IF YDIST>XDIST THEN XDIST=YDIST
1145 Y2=START*32000:X2=XDIST:X1=XC:Y1=YC:REAL2=FINISH
1150 CIRCLE(X1,Y1),X2,Y2/32000,REAL2,REAL1,KOLOR:GOSUB 1545:GOTO 1110
1155 :
1160 ' _____ SEMI-CIRCLE _____
1165 MSG1$="Enter first end point of semi-circle (drawn clockwise)"
1170 MSG2$="Enter second end point of semi-circle"
1175 GOSUB 1440:IF QT=1 THEN 270
1180 X0=X2:Y0=Y2:Y1=Y1*1.97:Y2=Y2*1.97:XC=(X1+X2)/2:YC=(Y1+Y2)/2
1185 GOSUB 1625:FINISH=START+.5:IF FINISH>1 THEN FINISH=FINISH-1
1190 X1=XC:Y1=YC/1.97:X2=XC:REAL1=START:REAL2=FINISH
1195 ON ERROR GOTO 1210
1200 CIRCLE (X1,Y1),X2,REAL1,REAL2,.508,KOLOR
1205 ON ERROR GOTO 0:GOSUB 1545: GOTO 1175
1210 GOSUB 1670:RESUME 1180
1215 :
1220 STOP
1225 '***** SUBROUTINE STORAGE AREA *****
1230 :
1235 ' _____ Text entry _____
1240 LOCATE 25,1:TXT$="":X=0: COL=LEN(MSG1$)+2:PRINT MSG1$;
1245 WHILE X<MAX
1250 LOCATE 25,COL:PRINT TXT$;" ";:I$=INPUT$(1)
1255 IF ASC(I$)=27 THEN QT=1:X=MAX:GOTO 1275
1260 IF ASC(I$)=13 THEN X=MAX:GOTO 1275
1265 IF ASC(I$)=8 AND X>0 THEN TXT$=LEFT$(TXT$,X-1):X=X-1:GOTO 1275
1270 IF ASC(I$)=8 AND X<=0 THEN 1275:ELSE TXT$=TXT$+I$:X=X+1
1275 WEND:RETURN
1280 :
1285 ' _____ DRAW GRID _____
1290 FOR Y=0 TO 185 STEP 5:LINE (0,Y)-(639,Y),1:NEXT Y
1295 FOR X=0 TO 630 STEP 10:LINE (X,0)-(X,189),1:NEXT X
1300 LINE(639,0)-(639,190),1
1305 RETURN
1310 :
1315 ' _____ REDRAW FROM FILE RECORDS _____
1320 WIPE=1
1325 ON ERROR GOTO 1425
1330 FOR X=START TO FINISH
1335 GET #1,X
1340 OBJ=CVI(OBJ$):X1=CVI(X1$):Y1=CVI(Y1$):X2=CVI(X2$):Y2=CVI(Y2$)
1345 KOLOR=CVI(KOLOR$):REAL1=CVS(REAL1$):REAL2=CVS(REAL2$)
1350 IF ERSE =1 THEN KOLOR=0
1355 ON OBJ GOTO 1360,1365,1370,1375,1375,1380,1385,1420,1390,1395,1400,1405,1
410,1415

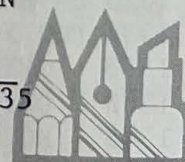
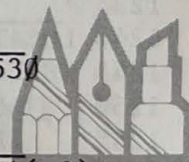
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1360 LINE (X1,Y1)-(X2,Y2),KOLOR,B:GOTO 1420
1365 PSET (X1,Y1),KOLOR:GOTO 1420
1370 VIEW (X1,Y1)-(X2,Y2):GOTO 1420
1375 LINE (X1,Y1)-(X2,Y2),KOLOR:GOTO 1420
1380 PAINT (X1,Y1),KOLOR,5:GOTO 1420
1385 GOSUB 1600:SYMBOL (X1,Y1),TXT$,X2,Y2,KOLOR,REAL1:GOTO 1420
1390 CIRCLE (X1,Y1),X2,REAL1,REAL2,.508,KOLOR:GOTO 1420
1395 CIRCLE (X1,Y1),REAL1,,,KOLOR:GOTO 1420
1400 CIRCLE (X1,Y1),X2,,,REAL1,KOLOR:GOTO 1420
1405 CIRCLE (X1,Y1),X2,REAL1,REAL2,.508,KOLOR:GOTO 1420
1410 CIRCLE (X1,Y1),X2,Y2/32000,REAL2,REAL1,KOLOR:GOTO 1420
1415 CIRCLE (X1,Y1),X2,REAL1,REAL2,.508,KOLOR
1420 NEXT X:ON ERROR GOTO 0:RETURN
1425 RESUME NEXT
1430 :
1435 ' GET X & Y COORDINATES FOR GRAPHIC COMMANDS
1440 X1=0:Y1=0:X2=0:Y2=0:LOCATE 25,1:GOSUB 1485:PRINT MSG1$;
1445 GCURSOR (X0,Y0),(X1,Y1),2:PSET (X1,Y1),2
1450 IF MSG2$="" THEN 1470 ELSE GOSUB 1485:PRINT MSG2$;
1455 GCURSOR (X1,Y1),(X2,Y2),2:PSET (X2,Y2),2:IF X2=X1 AND Y2=Y1 THEN QT=1:GOTO
1470
1460 IF MSG3$="" THEN 1470 ELSE GOSUB 1485:PRINT MSG3$;
1465 GCURSOR (X2,Y2),(X3,Y3),2:IF X3=X2 AND Y3=Y2 THEN QT=1
1470 X0=X1:Y0=Y1:GOSUB 1485:RETURN
1475 :
1480 ' CLEAR MESSAGE LINE AND RELOCATE CURSOR
1485 LOCATE 25,1:PRINT B$;:LOCATE 25,1:RETURN
1490 :
1495 ' SELECT COLOR FOR DRAWING/PAINTING
1500 PRINT "1-Black ";:COLOR 0,1:PRINT " 2-Blue ";:COLOR,2:PRINT " 3-Green ";
1505 COLOR,3:PRINT " 4-Lt.Blue ";:COLOR,4:PRINT " 5-Red ";:COLOR,5
1510 PRINT " 6-Purple ";:COLOR,6:PRINT " 7-Yellow ";:COLOR,7:PRINT " 8-White ";
1515 MAX=8:MIN=1:COLOR 2,0:GOSUB 1530:KOLOR=I-1:GOSUB 1485:RETURN
1520 :
1525 ' NUMERIC INPUT AND CHECKING ROUTINE
1530 I$=INPUT$(1):I=VAL(I$):IF I>=MIN AND I<=MAX THEN RETURN ELSE GOTO 1530
1535 :
1540 ' WRITE DRAWN OBJECT TO DISK FILE
1545 LSET OBJ$=MKI$(OBJ):LSET X1$=MKI$(X1):LSET Y1$=MKI$(Y1):LSET X2$=MKI$(X2)
1550 LSET Y2$=MKI$(Y2):LSET KOLOR$=MKI$(KOLOR):LSET REAL1$=MKI$(REAL1)
1555 LSET REAL2$=MKI$(REAL2):RECORD=RECORD+1:PUT #1,RECORD:RETURN
1560 :
1565 ' UPDATE FILE RECORD IF ERASURES MADE
1570 CLOSE #1:OPEN "R",#1,FILE$,20:FIELD #1, 20 AS COPY$
1575 OPEN "R",#2,"TEMP.FIL",20:FIELD #2, 20 AS TCOPY$
1580 FOR X=1 TO RECORD:GET #1,X:LSET TCOPY$=COPY$:PUT #2,X:NEXT X
1585 CLOSE #1:CLOSE #2:KILL FILE$:NAME "TEMP.FIL" AS FILE$:RETURN
1590 :
1595 ' TEXT FILE MANIPULATION
1600 GET #3,REAL2:TXT$=TEXT$
1605 WHILE RIGHT$(TXT$,1)="" :TXT$=LEFT$(TXT$,LEN(TXT$)-1):WEND:RETURN
1610 LSET TEXT$=TXT$:PUT #3,LOF(3)/50+1:REAL2=LOF(3)/50:GOSUB 1545:RETURN
1615 :
1620 ' FIND BEGIN AND END POSITIONS OF ARC
1625 DX=X1-XC:DY=Y1-YC:GOSUB 1635:START=THETA:DX=X2-XC:DY=Y2-YC:GOSUB 1635
1630 FINISH=THETA :RAD=SQR(DX^2+DY^2):RETURN
1635 IF DX=0 THEN THETA=.25 ELSE THETA=ATN((DY/DX))/(2*3.14159)
1640 IF DX<0 THEN THETA=.5-ABS(THETA)
1645 IF DY<0 THEN THETA=1-ABS(THETA)

```





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1650 RETURN
1655 :
1660 ' _____ MESSAGE TIMER FOR ERROR _____
1665 GOSUB 1485
1670 PRINT " *** Unable to complete arc. Nothing written to file *** ";
1675 FOR T=1 TO 1500:NEXT T:GOSUB 1485:RETURN

```

## LISTING 2:

```

5000 ON ERROR GOTO 5023:OPEN "R",#1,"file name goes here",20
5001 FIELD #1, 2 AS OBJ$,2 AS X1$,2 AS Y1$,2 AS X2$,2 AS Y2$,2 AS KOLOR$,4 AS RE
AL1$,4 AS REAL2$
5002 OPEN "R",#2, "file name goes here"+" .txt",50
5003 FIELD #2, 50 AS TEXT$:RECORD=LOF(1)/20
5004 FOR X=1 TO RECORD:GET #1,X
5005 OBJ=CVI(OBJ$):X1=CVI(X1$):Y1=CVI(Y1$):X2=CVI(X2$):Y2=CVI(Y2$)
5006 KOLOR=CVI(KOLOR$):REAL1=CVS(REAL1$):REAL2=CVS(REAL2$)
5007 ON OBJ GOTO 5008,5009,5010,5011,5011,5012,5013,5020,5014,5015,5016,5017,501
8,5019
5008 LINE (X1,Y1)-(X2,Y2),KOLOR,B:GOTO 5020
5009 PSET (X1,Y1),KOLOR:GOTO 5020
5010 VIEW (X1,Y1)-(X2,Y2):GOTO 5020
5011 LINE (X1,Y1)-(X2,Y2),KOLOR:GOTO 5020
5012 PAINT (X1,Y1),KOLOR,5:GOTO 5020
5013 GOSUB 5030:SYMBOL (X1,Y1),TXT$,X2,Y2,KOLOR,REAL1:GOTO 5020
5014 CIRCLE (X1,Y1),X2,REAL1,REAL2,.508,KOLOR: GOTO 5020
5015 CIRCLE (X1,Y1),REAL1,,,KOLOR:GOTO 5020
5016 CIRCLE (X1,Y1),X2,,,REAL1,KOLOR:GOTO 5020

```



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```

5017 CIRCLE (X1,Y1),X2,REAL1,REAL2,.508,KOLOR:GOTO 5020
5018 CIRCLE (X1,Y1),X2,Y2/32000,REAL2,REAL1,KOLOR:GOTO 5020
5019 CIRCLE (X1,Y1),X2,REAL1,REAL2,.508,KOLOR
5020 NEXT X:ON ERROR GOTO 0:CLOSE:RETURN
5022:
5023 RESUME NEXT
5025:
5030 GET #2,REAL2:TXT$=TEXT$
5031 WHILE RIGHT$(TXT$,1)="" :TXT$=LEFT$(TXT$,LEN(TXT$)-1):WEND
5032 RETURN

```

#### LISTING 3:

```

99 CLS
100 INPUT "ENTER NAME OF 8 BIT FILE ";SOURCE$
200 INPUT "ENTER NAME OF RESULT FILE ";RESULT$
300 OPEN "R",#1,SOURCE$,8
400 OPEN "R",#2,RESULT$,20
500 FIELD #1,8 AS SDATA$
520 FIELD #2,2 AS OBJ$,8 AS RDATA$,10 AS DUMMY$
600 FOR RECORD=1 TO LOF(1)/8
700 GET #1,RECORD
800 LSET RDATA$=SDATA$:LSET OBJ$=MKI$(6):LSET DUMMY$=MKI$(5)
900 PUT #2,RECORD
1000 NEXT RECORD
1005 CLOSE
1010 NAME SOURCE$ AS SOURCE$+".vr1"
1100 CLOSE

```



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## LETTERS

Continued from Page 6.

I tried to increase the buffer size as suggested by Mr. Earl (November '84, Page 7), but with no visible effect on either *WordStar* or *CalcStar*. Does the *BUFFER=* statement work with MS-DOS 1.25?

There is an article in the November, 1984 issue of *Microcomputing* that *WordStar* users may find helpful — a user patch listing that changes the way *WordStar* does a partial screen write. It allows the program to take advantage of the built-in line editing in the Sanyo BIOS. I installed it in my *WordStar* in about an hour and it works fine. It would have taken much less time, but there is a typo in the typing instructions on Page 49: E 311 72 B6 should be E 311 72 06. By the way, you don't need to know

anything about assembly language to do the patch; I don't and I did!

Glenn R. Marrs  
Pittsburgh, PA

**Editor's Note:** You're right, it was a very worthy enhancement — anything that improves *WordStar*'s single-line scrolling on the Sanyo, especially with color installed, is a godsend. Thanks for passing along the corrections to our readers. I don't believe *Microcomputing* will be able to pass them along themselves.

Also, Mr. Richard Kruse, the author of the article, informed us that if the patch is installed with MS-DOS 2.11, the source code listing on Page 48 of the article will deviate in two places from the unassembled *DEBUG* display. Not to worry — it's still correct.

As for your first question about the *BUFFER=* statement, it is not supported by MS-DOS 1.25. It's hard to catch all of the discrepancies between the two MS-DOS versions and flag them accordingly, but we will always try to pass them along as we catch them.

### dBASE TOO

**Editor:**

I have advanced skill in the use of *dBASE II*, but I want to use my *dBASE* files with *InfoStar* and *DataStar*. Can this be done? What about with *MailMerge*?

Judging from user group info, there are other 555 users who run *dBASE* too.

H.P. Kornick, D.V.M.  
Sanford, FL

**Editor's Note:** To use *dBASE II* files

with other systems, you'll first need to convert the files to a format readable by the other programs. This can usually be done easily with *dBASE*'s *COPY TO filespec SDF DELIMITED* which creates an ASCII file delimited with commas. Reading files in this format back to *dBASE II* can be done with *APPEND FROM filespec SDF*.

### INTERESTING OBSERVATIONS

**Editor:**

Out of the numerous technical publications and professional journals I read, yours is the only one for which I skip a night's sleep every month, and the first I felt worth sending some feedback.

I am writing about an article entitled "The Interest In Interest," written by Dr. Michael Ecker (November '84, Page 8). I just wish to make readers aware of the fact that the yield computation method shown in the program may not coincide with the ones used by some banks, which may use the  $e^x$  formula, or may incorporate compounding effects in the yield; many banks may call "daily" a compounding frequency of 1.15741 E-5 Hz as opposed to the expected 1.14155 E-5 Hz for a non-leap year and 1.13843 E-5 Hz for a leap year. (N would be equal to 360 in the program.)

Furthermore, the floating point accuracy used by the bank program may not be identical to the one of Dr. Ecker's program.

The above yield computation parameters vary from bank to bank, account to account, etc., and should be available from relevant institutions.

As a conclusion, I hope to warn users about trying to match bank balances with the program, knowing how careful a typical Sanyo user is when it comes to money. This is not a criticism about Dr. Ecker's contribution which, as others, is greatly

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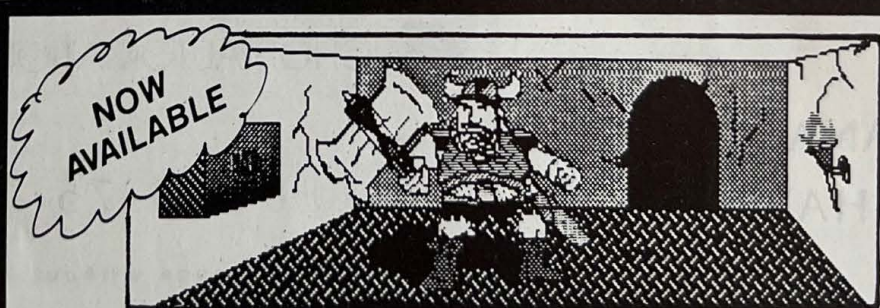
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appreciated, and I hope such comments could be an incentive for readers who do not submit programs because they are apprehensive about possible pitfalls; as you usually see in this section, there is plenty of constructive support from enthusiastic readers. What a great feeling!

*Christopher Quarksnow  
New York, NY*

*Editor:*

In reference to "The Interest In Interest," what you see is not necessarily what you get. Taxes must be paid on interest and inflation reduces the principal's value, even if no withdrawals are made. These factors may be included in the equation to see whether the account is growing in value or not, and by how much.

Assuming interest, taxes and inflation are all effected quarterly, the constant dollar gain of the account can be computed as:

$$G = P * ((1(r*(1-t)-i)/4)^4 - 1)$$

where

G = Gain, in terms of constant dollars, by year end

P = Principal in the account at the start of year

t = Annualized tax rate, as a decimal

r = Annualized interest rate, as a decimal

i = Annualized inflation rate, as a decimal

For example, if P=\$1000, t=.3 (30% federal plus state income tax), r=.06 (6% interest), and i=.05 (5% inflation rate), then G=-\$7.98 — a slight negative gain (that is, a loss.)

*Alan Reed  
Monrovia, CA*

## DOS UPDATE

*Editor:*

I would like to compliment Jon Geist on his excellent article, "Operating Systems for the MBC-550 Series" (December '84, Page 15). Since he wrote his article we have upgraded DS DOS Plus two times. The more we program on the Sanyo, the more we learn, and at MichTron we constantly upgrade our products.

The new DS DOS Plus: 1) will automatically read or write to a 40 track disk in an 80 track drive; 2) can be manually configured to read many combinations of disks and disk drives; 3) has a menu operated and totally rewritten format routine; 4) has a new *DISKCOPY* that is much faster and more reliable than the original MS-DOS *DISKCOPY*; 5) can control any combination of 40 track and 80 track drives; 6) does not hang up on unsatisfactory disk accesses; 7) has a Catalog utility that gives you a sorted directory; 8) has additional utilities on the disk, including a machine language sort, a strip utility (removes control codes from *WordStar* files), a special list program with with an eye-appealing format, a case changer and a help file. In addition, DS DOS Plus is the only DOS that will work on machines modified to run 512K.

Anyone who has an earlier version of DS DOS can send their master disk and \$7 to us and we will upgrade them to the new version.

*Gordon Monnier  
MichTron  
Pontiac, MI*

## soft sector

## SUBMITTING MATERIAL TO SOFT SECTOR

Contributions to **SOFT SECTOR** are welcome from everyone. We like to run a variety of programs which will be useful/helpful/fun for other Sanyo owners.

• **FORMAT:** Unless the program accompanying your submission is less than 10 lines, we must have the program itself on disk. We will print out the listing to our specifications. We simply cannot take the time to key in (and debug our typing errors) material which is longer than that. Editorial copy can also be included on disk, using any of the word processors currently available for the Sanyo 550/555. However, please also include a double-spaced hard copy of your editorial material and hard copy of your program listing. Please do not send text in all capitals. Use upper- and lowercase. It is a big help to us in typesetting for you to send your article saved on disk using the ASCII option, but it is not mandatory. We must have, at the very least, a hard copy of the article.

• **WHAT TO WRITE:** Anything with a practical application. If it interests you, it will probably interest a lot of others. However, we vastly prefer articles with accompanying programs which can be entered and run. The more unique the idea, the more appeal. We can prepare finished tables, diagrams and schematics from your rough draft if you provide legible copy and full directions. We have a continuing need for short articles with short listings.

We do pay for submissions, based on a number of criteria. Those wishing remuneration should *so state* when making submissions.

For the benefit of those who wish more detailed information on making submissions, please send a SASE to: Submissions Editor, **SOFT SECTOR**, P.O. Box 385, Prospect, KY 40059. We will send you some more comprehensive guidelines.

Please do not submit programs or articles currently submitted to other publications.

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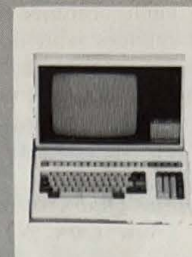
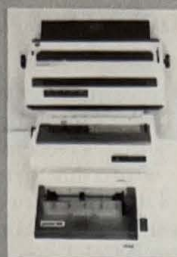
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# REVIEWS

## Software review

### *TLS* — The Perfect Companion To The Sanyo 550 Series

Christmas Day, 1984. She had shopped in earnest since early in November for something her mother would use and not put on the shelf of the hall closet as soon as the holidays were over. Ever since she could remember, it had been difficult to find her mother a gift. But this year, she hoped, would be different. Wrapped in bright colored paper beneath the tree sat a new Sanyo MBC-555 with 256K and double-sided drives.

As Mom delicately opened the big box, her eyes lit up with excitement. "But how am I going to learn how to use the thing?" she asked. "I don't know the first thing about computers."

Fortunately, darling daughter had also purchased the Total Learning System (TLS) MS-DOS tutorial for the Sanyo. And having learned enough in the store to know to put the diskette in at the A> prompt, she loaded the program and sent the computer merrily spitting up a most excellent teaching tool. Mom watched her as she went through the first few screens, then pushed her out of the way. After a few hours, Mom was able to grasp the fundamentals of MS-DOS. Later, she was seen hovering over the *Operator's Guide* well into the night.

At \$39.95, *TLS* pays great attention to detail and incorporates easy-to-understand graphics in this multi-level tutorial. The first-time user starts out with first-time

material: the keyboard, the nature of the RETURN, CONTROL, and ESCAPE keys, and the numeric pad, just to name a few. From there you advance to the care and handling of diskettes. A feature I found especially inventive was a graphics display of a diskette. To illustrate the importance of write-protection, a little write-protect tab comes out from the side of the screen and places itself on the disk.

More advanced users can skip to a different section of the tutorial. Further, if you leave the tutorial, *TLS* remembers which sections you have completed and returns you to where you were. Functions which are often taken for granted, like switching the default drive and setting the date and time, are well documented and organized. Although some of the quizzes are excruciatingly simple for the experienced user, the novice will find them invaluable, especially if he or she has never been exposed to computers and/or MS-DOS before. Larger sections of the program center on formatting, copying using *DISKCOPY*, copying using *COPY* and other commands.

If you have used a Sanyo before, you will notice the absence of the *DELeTe* command to purge files from MS-DOS. The *TLS* tutorial uses the command *ERASE* instead. It was news to me that this command even existed, but evidently it works the same way as *DELeTe*. Several tests on my system failed to discover any difference.

*TLS* has more advanced sections on subdirectories, using and understanding the manual, and exiting programs. The manuals, as some of you well know, are not the most complete or accurate publications. The syntax knowledge required to understand system commands is somewhat overwhelming to someone unfamiliar with computer manuals. *TLS* exercised forethought by including this section in the tutorial.

Compare, for a moment, the Sanyo to the Commodore 64. One error Commodore made with the 64 was the lack of easy-to-swallow documentation and instructions on basic rules and BASIC commands. The documentation which really helped people had to be supplied many months after the 64's introduction by third party publishers. From the feedback I get from Sanyo users, we may be seeing computer history repeat itself. Many folks already familiar with micros found the *Sanyo Operator's Guide* to be of only marginal use, and novices who ran the many error-laden examples experienced needless hours of frustration. Then Sanyo comes along and charges up to \$50 each for "reference manuals." The nerve! We should applaud *TLS* for its excellent efforts in helping me, Mom, and you the user to better experience the advantages that the salespeople tell us about.

If you are considering purchasing a Sanyo or need a little help with the one you own, I strongly recommend you find the \$39.95. This package will give you a good return on your investment. Included with *TLS* at no extra charge is the *TLS Tutor* for *WordStar* and *MailMerge*, an audio cassette that offers interactive training instructions while you are actually using these programs.

I hope we can look forward to more tutorials from *TLS*.

(Total Learning Systems, 3451 N.W. 55th Street, Ft. Lauderdale, FL 33309, 305-485-6882, "Sanyo Bonus Pack" with *TLS* and *TLS Tutor-WordStar/MailMerge*, \$39.95)

—George M. Smart, Jr.



## CPeMulator — Hanging On To CP/M-80

An emulator is a program running on one computer that sets up an environment to simulate another computer and interprets the instruction code so it can be executed by the host system. The origin of this notion arose because computers evolve faster than applications can be rewritten. In many cases it was cheaper to write a program to emulate the old computer than to rewrite the application to run on the new computer when the old computer was replaced.

In the micro and personal computer area, no one would seriously consider doing business with an emulator. If an application works on a CP/M-80 machine, there is no com-

elling reason to move it to an MS-DOS machine. However, if you are an experimenter and want to see some of the public domain CP/M-80 programs and do not have an eight-bit machine to run them on, you might consider an emulator of value.

*CPeMulator*, from U.S. Digital, is an 8080 emulator. It works from MS-DOS disks and assumes the 8080 code to be on MS-DOS disks. It does have a utility included that will read "Kaypro formatted diskettes," so if you can get public domain software in Kaypro format, you can transfer it to an MS-DOS disk. The other method of obtaining 8080 software is via modem with a file transfer program. Of course, U.S. Digital would be happy to sell you their *Copylink* program to do that.

The emulator program is shipped in an envelope. The manual is a spiral bound book of the usual PC book size, with 34 pages and several appendices. Page 1 of the manual contains instruction on how to bypass the manual. It says, in effect, don't read this manual unless you have nothing better to do. The appendices contain all the instruction needed. Being a perverse creature, I read it all the way through. The little manual reads well. It has the flavor of a magazine article, being tutorial in nature, although it bogs down some in the explanations of file copying because of having to deal with both single drive and dual drive users. As an educational tool, I would give this program and manual high marks.

The *CPeMulator* disk contains one sample of a CP/M-80 program and one utility program, along with the emulator. The sample program is a filter that resets the eighth bit in any text file. The utility is *SAVE.COM*, which acts like the CP/M save command, copying memory to disk.

To test the emulator, I copied some programs from one of my S-100 machines to the Sanyo. Included were old CP/M 2.2 *STAT* and *DDT*. Both of these utility programs ran without problems. Even *STAT* did very well. It tried to do its job, but it got wrong numbers for the disk size and file sizes because of the slight differences in the CP/M and MS-DOS conventions. The fact that it runs at all shows how close they are.

*DDT* ran fine. I used it to install an 8080 version of a communication program, saved it with *SAVE.COM*, and got it to run and talk to its parent on the S-100 machine. (It was probably too slow to do file transfers and such, but character-by-character transfers went fine.)

To try a big program, I copied a database system to the Sanyo. It ran, with majestic slowness, just like it did on the S-100 machine. The emulator works fine. Of course, I fed it some garbage, which it handled properly. (An emulator should never lose control.)

The manual is good. The writers and the software writers have style, and I have no doubt this program will do everything it is supposed to do. The doubts that I do have are those involving the need for this program. Of course if you need an emulator, here it is. If you want an emulator to learn about 8080s and CP/M 2.2, this will help. Where this program belongs is as a utility with the U.S. Digital *Copylink* program.

(U.S. Digital, 5687-H S.E. International Way, Portland, OR 97222, 503-654-0668, \$99.95)

— Harold L. Reed

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## Character Generator — Designing Your Own Character Sets

*Character Generator*, by Michigan Software, allows the user to go beyond his wildest imagination in generating unique character sets. This program allows you to generate large, small, thick or thin letters, and any special characters or character strings you can think of. *Character Generator* allows technicians to build the special characters required for their jobs which are typically not on the keyboard. All this for only \$24.95.

The program comes with a loading program, two character sets and an editor program. The loading program, *CHARGEN.COM*, is required to load a character set or to use the editor program. The character sets supplied are italics (*ITAL.CHR*) and script (*SCRIP.CHR*). The *EDITOR* program, written in Sanyo BASIC, allows the user to generate an individualized character set. The program is unprotected to allow for any modifications one might want to make.

The documentation is short but concise, and basically explains:

- 1) How to copy the program from the master disk to system disk.
- 2) The general operation instructions.
- 3) How to use the editor program.

The instructions for copying the information are explicit.

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However, the command used in the *START* and *START2* batch files for copying the data sets was incorrect. The command used was 'C', but Sanyo does not recognize this command. As a result, I had to copy each file individually. I contacted Michigan Software and they assured me the fix had already been made. The general operating instructions are easy to follow. They simply state how to load the new character sets, that is, *CHARGEN* followed by the filename to be loaded. Only one character set can be loaded at a time and, once loaded, a message is displayed on the video monitor stating that *Character Generator* is installed.

To load the *EDITOR* program, first load the *Character Generator* by typing *CHARGEN*, then load BASIC, then the *EDITOR* program, and finally enter PF4 to run *EDITOR*. The editor cannot be run without first loading *CHARGEN*. If you try, an error message will be produced and you must start over.

The *EDITOR* program is menu driven. It uses 11 functions and an eight-by-eight grid which is the work area used to display the character being worked on. The user selects the desired function and the character is operated on in the grid based on that function. The 11 functions allow the user to load a character cell, get a character cell, modify a cell, insert a character, replace an original character, display a cell as character, position a character up, down, left or right, fill a character cell, erase a cell and finally, save a character cell.

The editor program allows the user to modify characters by using the eight-by-eight grid. When a 'G' (get character) command is executed, the program asks which character

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to get. In this case I used the number sign (#). *GET* stores the number sign in the grid which allows me to change it. The number sign is displayed as dots in each grid. It is modified by turning off existing dots and turning on new dots based on a row/column address for each grid point. When I defined my new character, I issued the 'I' (insert) command and the program included it in the character set. I then started with the 'G' (get) command and completed the same routine for each character I wanted to modify. When all the modifications were complete I issued the 'S' (save) command to save the new character set. The system replied by requesting a filename to which I replied *MYFILE*. The system then saved it as *MYFILE.CHR*. After saving the file, 'Q' (quit) is used to exit from the *EDITOR* program.

The next step is to exit BASIC, which is done by typing in *SYSTEM*. Finally, I loaded my new character set by typing *CHARGEN MYFILE.CHR*. The character set is now ready to use with any program desired, including *WordStar*, *EasyWriter*, BASIC, *CalcStar* and Turbo PASCAL. The new character set will remain active until the system is turned off.

The one problem I found with this program is that the characters created cannot be used in text format for printing as output from any of the previously mentioned packages. The unique character is ignored and the print routine defaults to the original character. The method available to print the character set is *Screen Print*, another program created by Michigan Software. *Screen Print* allows the characters to print, however, the output is rotated 90 degrees prior to printing. This makes the output virtually worthless if the characters are to be used with text. The characters do not print in the text format, therefore they are confined to a disk file on your Sanyo system or a compatible system. If you have a letter, term paper or a professional paper to be printed, don't try it. Instead, send the disk with the material and hope the individual has a Sanyo or compatible system to read it.

In summary, *Character Generator* is a worthwhile program for the user requiring a unique character set. It is easy to use, the documentation is clear and easy to follow and, best of all, I could not find any bugs in it. The only problem is that when printing unique characters, they can only appear by printing them using *Screen Print* and then they are rotated 90 degrees for printing.

(Michigan Software, 43345 Grand River, Novi, MI 48050, 313-348-4477, \$24.95 plus \$3 S/H)

— John E. Schlosser

## Software review

# Sanyo Direct Transfer — A Utility For Terminal Software

*Sanyo Direct Transfer* is a program that is used with another program. It resides in memory with your communications software to make it easier to transfer files that contain non-ASCII characters.

The ASCII communications protocol which most computers follow contains encoding standards for the transmission of numerals, letters and some other characters. The standard does not specify or support codes like CTRL-V for page up or "01D2" for cursor position. Manufacturers have used their prerogative to assign different codes for these and many other functions not defined in the ASCII standard. The codes for reverse video on one computer may be either unsupported or cause a complete system crash on another. That is why computers are very picky about what terminals are connected to them. To get an idea of the number of different "standard" protocols look at the menu of terminals supported by the *INSTALL* program for *WordStar*.

To further complicate matters, software often calls on special characters (CTRL-V for insert in *WordStar* for example), that can cause a modem or terminal emulator program to go OFE—Off the Face of the Earth. *Sanyo Direct Transfer* helps to smooth out these complications.

The most important reason for this program, however, is to be able to transmit machine language files in their native tongue. These files contain every possible combination of codes and characters. Try using the *TYPE* command on any file with the .EXE extension to see how they are handled in ASCII.

*Sanyo Direct Transfer* works with an existing terminal emulator program. I tested it with *Mi-Term*, John Weaver's very cost effective terminal emulator program. A nifty batch file is written which loads both the terminal program and *SDT* with one command.

Communication is established with the other computer using the conventions of your terminal software. The sender enters SHIFT-CTRL-T which causes *SDT* to take over file



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transfer. The program prompts for 300 or 1200 Baud and asks for the filename to transfer.

The receiving party enters SHIFT-CTRL-R and is asked the same questions. The software displays an "Awaiting Handshake" message to the party who enters the appropriate commands first. The program transfers data in blocks of 256 bytes, checks for accurate transmission, and resends the data if necessary.

The program updates you with each block of data as it is sent, any retransmission necessary, and sounds the BEEP when the entire file has been successfully sent or aborted by either party's BREAK key.

SDT is not without flaws. On my RGB monitor, SDT's messages could not be erased with the other text. After transmitting several files I had to reboot the computer to clear the old messages. And on one file transfer, SDT went OFE when some keys on the receiving end were pushed.

The program works as advertised, easily copying large assorted files reliably. It's shortcomings are not terribly serious and the documentation is adequate. Existing utilities and terminal programs can do the same job as SDT, but are more cumbersome. If you have the need to transfer a large number of files to another Sanyo via modem, Sanyo Direct Transfer may be for you.

(Michigan Software, 43345 Grand River, Novi, MI 48050, 313-348-4477, \$29.95 plus \$3 S/H)

— Stephen W. Baker, Ph.D.  
and Bill Vaughn

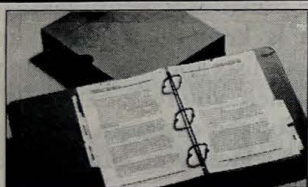
## Software review

# MI-KEY — A Complete Keyboard Translator

Have you ever wanted to change a few keys on your keyboard, like that annoying semicolon to a regular colon? Well, wait no longer. MI-KEY is here!

MI-KEY is a key translator program which works along with most other programs (including WordStar, BASIC, DOS, etc.). It enables you to press a key and have a different character or character string entered. Also, this versatile program can define and redefine 50 control keys to represent a character or even whole words or commands.

There are two different versions of MI-KEY, MI-KEY.COM and MI-KEYLG.COM. MI-KEY.COM allows an average of 20 characters for each definition of a control key, whereas MI-KEYLG.COM allows an average of 63



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characters for each control key. But to gain these added characters, *MI-KEYLG.COM* requires about 2K more memory than the smaller version. Not too much of a sacrifice for triple the capacity.

To operate properly, *MI-KEY* must be installed right after your computer is booted. *MI-KEY* will work with both MS-DOS 1.25 and 2.11 operating systems. It uses a standard ASCII file to redefine the keys on your keyboard. This standard ASCII file is developed by you through *WordStar* or any ASCII file generator and contains your desired key definitions. The easiest way to use *MI-KEY* is to run the program automatically through an *AUTO-EXEC.BAT* file so that your keyboard will be redefined the way you initially programmed it every time you boot up your system.

The format structure for the *MI-KEY* command is as follows:

#### MI-KEY /L /R DEMO.KEY

- MI-KEY — the actual program that will be run. *MI-KEYLG* may be substituted if desired.
- /L — displays a list of any translations currently in use. It is optional.
- /R — resets all keys to their normal values. It is also optional.
- DEMO.KEY — a standard ASCII file containing the desired key definitions that you set up through *WordStar* or in some other manner.

A well written, 13-page booklet is included in the package. The booklet contains some examples of how to use *MI-KEY* and a Control Key Chart for your quick reference. This booklet has been made to fit into the loose-leaf manual binders supplied with each Sanyo MBC-550/555 computer.

Anyone who needs multiple function control keys (a maximum of 50), or has a need to change character positions on their keyboard, would most benefit from *MI-KEY*.

(MichTron, 576 South Telegraph, Pontiac, MI 48053, 313-334-5700, \$34.95)

— John Kandra

## Software review

# Postmaster II — The Answer To Your Mailing List Problems

*Postmaster II* is a mailing list program for the 550/555 series which can be used by novices and experienced users alike to maintain and print mailing lists. If you run a small business or do mass mailings, *Postmaster II* is an ideal program for you to establish and maintain such lists. The program is quite flexible in that the capability to exchange disks, as well as the capability to record and maintain up to three "other" categories of information in the file, are included in it. These two capabilities make the program usable in maintaining multiple, specialized mailing lists, as well as simple databases. If you can live with the limited sort capability (it will sort only on the name field), it could work quite well as a database manager.

The program stores several pieces of information in memory, thereby allowing you to do very fast searches by Name, State or ZIP Code, as well as the first of the "other" categories which I have previously mentioned. The remainder of the information is kept on the disk and, although it can be printed on your lists and labels, it cannot be used as a search criteria when you're looking for a particular record. This feature of the program, however, limits the size of the database which you can maintain with the program. The limits, specifically, are 500 names for 128K of RAM and 1,800 for 256K of RAM. Such "in memory" limitations are common to all programs using this type of a searching scheme and are unavoidable.

The program was written in BASIC and does make good use of the Sanyo's color display capabilities as well as the *INKEY\$* function. What results is a program which is generally very fast and makes the maintenance of a mailing list easy and accurate.

In evaluating the program, I set up a telephone book

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(to replace the dogeared one we've been promising ourselves we'd rewrite for the last two years). It was extremely easy to enter the records and print out the list of names in the database. There were, however, four things which I did notice: 1) the length of time it took to sort the list when an alphabetical listing was requested, 2) the somewhat limited character set allowed in defining the "other" categories, 3) the lack of a counter to keep track of the number of records in the database and, 4) the program's sensitivity to upper - and lowercase differences when providing search criteria.

Once you have a file established you can list it out on the screen or to the printer, or even print out labels if that's what you want to do. There is a default label format already specified for you, but if you want to print out any of the other categories or want to print your labels in a format other than the default, you'll have to learn to use the "format labels" option of the program. This, however, is not difficult and allows you a great deal of flexibility in creating label formats. Additionally, this same label formatting feature allows you to put printer control codes in your label and get mixed print sizes in them. When properly used, this feature allows for some very professional looking labels.

If you're a database purist, you'll have some trouble with the author's definitions. In true database terminology, the mailing list is called a file or a database (here consisting of only one file) while each of the entries in the file (the mailing list) is called a record, not a file as they're called here. Each of the entries in the record then, are called

fields. Finally, what you specify as the contents of the field you are searching for a match to is more correctly called a selection criteria. In the case of maintaining a mailing list, these items are probably trivial, but you should be aware of these discrepancies if you're to develop a sound foundation in database management.

One noteworthy thing was the assistance I got from Olympic in replacing a wiped out program disk during the review of the program. I'm not really sure how it happened (we never really are!), but it did. After I explained my dilemma and answered a few embarrassing questions, they sent me a replacement copy and in two days, I was back in business.

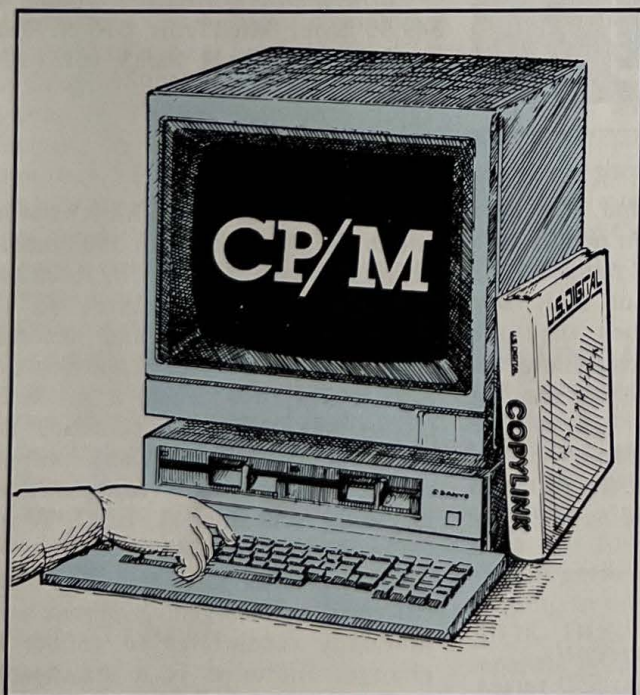
By way of information to those of you who have some experience with database management programs such as *DataStar* (which was included with many Sanyo systems), this program is really just a specialized database which was written in BASIC. With a program such as *DataStar*, you could create such a database with a few hours (or a few minutes for some!) of effort. It does, however, take some effort to set up the screens and reports. If a mailing list is what you're looking for and you don't have a lot of time to spare, or perhaps lack some experience in the use of database managers, this program is probably worth the price.

(Olympic Educational Software, 1220 So. 356th Street, Suite 3D, Federal Way, WA 98063, 206-874-4044, \$49.95)

— Bill Chang



## PRESENTING CP/M FOR THE SANYO MBC 550/555



Without requiring any additional hardware, the Sanyo PC can now run CP/M programs. CPeMULATOR is an MSDOS program which simulates a full-blown 64K CP/M-80 operating system. This means Sanyo users can run whatever CP/M programs they may have — without having to repurchase or have them rewritten for MSDOS. Furthermore, there are over 10,000 programs available for CP/M.

### It's ultra-simple to run programs!

One simply precedes the CP/M program's name with "RUN." For example, "RUN dbase" would execute a CP/M version of dBASE II. It couldn't be easier! Without complicated booting procedures, CPeMULATOR handles everything automatically. You won't need the slim manual.

### And it's easy to load CP/M programs!

CPeMulator can run the programs of any CP/M machine, but it's necessary to get the CP/M program files onto the Sanyo's MSDOS disk format. U.S. Digital's COPYLINK program is one way to do this, since it can transfer binary .COM files (Modem 7-type programs cannot) between over 45 different CP/M (incl. Sanyo 1150 & 1250) and MSDOS systems. But, as a very convenient alternative, CPeMULATOR is supplied with an additional program to let the 550/555 directly read Kaypro II-formatted disks, the most common format for CP/M programs.

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## SOFT TALK



### SOMEONE'S IN THE KITCHEN

with their Sanyo now that Michigan Software has released their new *Recipe File*. The program allows recipes to be entered, edited, saved, and then later listed to the screen when they are needed. It features graphics defining the 20 different menu categories, ranging from quick meals and low calorie recipes to fondues and seafood. Further, if you have a line printer, the program allows you to print the recipes for sharing with friends.

*These products are currently available for the Sanyo 550 series of computers and will be reviewed in a future issue of SOFT SECTOR.*

*Recipe File* requires 256K of RAM and two disk drives, with double-sided drives preferred. Recipes are not included. The program is available for \$39.95 from Michigan Software, 43345 Grand River, Novi, MI 48050; (313) 348-4477.

\* \* \*

**IT'S A BIRD! IT'S A PLANE!** No, wait! It's *Cornerman*, MichTron's new release from J. Weaver Jr. *Cornerman* is a multi-function utility that resides in memory while you go about your computing tasks. With the stroke of a key from the DOS prompt, from BASIC, or from within any program, *Cornerman* appears in the corner of the screen ready to use. It includes an ASCII table, a dialer that will dial previously stored telephone numbers through a modem, a perpetual calendar, a 99-page notepad, and an eight-digit calculator with memory that operates in either binary, octal, decimal or hexadecimal number systems.

*Cornerman* is compatible with other memory-resident utilities, such as RAM disks and screen dumps, and does not interfere with their operation. It can be located into any position on the screen that the user defines and, further, many operation results of the program, such as calculations from the calculator, can be exported back into the awaiting applications program.

*Cornerman* is currently available for \$49.95 from MichTron, 576 S. Telegraph, Pontiac, MI 48053; (313) 334-5700.

\* \* \*

**TAXING YOUR SYSTEM.** It's not too late to get a jump on your 1985 income tax returns with *Supertax*, by Rockware Data. *Supertax* calculates all the necessary information and generates summaries of Page 1 and 2 and Schedule A of Form 1040. Then, it prints the income tax return on standard IRS government forms or on blank computer paper for use with transparencies, including Schedules A, B, C, W and G, as well as Form 3468.

If information entered by the user is corrected or changed, *Supertax* automatically recalculates to reflect the change. Included is a stand-alone program which calculates and prints your depreciation schedule using both the old rules and the new ACRS rules, designed to serve as a supplement to



IRS Form 4562.

*Supertax* is now available for the 550 series for \$99, plus \$3 shipping and handling charges. A special preparer's edition, at \$149, will also print Schedules D, E, SE, Form 6251, and preparer data at the bottom of Page 2 of Form 1040. For more information, contact Rockware Data Corp., P.O. Box 365, Plano, TX 75074; (214) 596-0588.

\* \* \*

**DATA SECURITY** is being offered by K+L Software in *N-CODE*, a file encryption program. *N-CODE* is based on a multi-layered security concept. Its four protective layers include a data encryption scheme, a unique coding process for each purchaser, a unique password, and a user-selected coding key of up to 20 alphanumeric characters. Diskettes with valuable information may be stored openly, yet securely, and encrypted files may be transmitted electronically free of unauthorized access.

*N-CODE* for the Sanyo 550 series is currently available in versions for both MS-DOS 1.25 and 2.11 for \$129. For more information, contact A-OK Computers, 816 Easley Street, Suite 615, Silver Spring, MD 20910; (301) 585-5105.

\* \* \*

#### ADVENTURE AT THE KEYBOARD.

At long last a few Adventure games are beginning to appear on the market for the Sanyo 550/555. One of the first to appear is *Tanner and the Jungle Temple*, by The Moonwolf Game Company. This Adventure features graphics representations of the current locations in the game and of the various monsters that the player encounters. Movement and action are accomplished with single-letter commands and unique game characters may be created and stored for later play. Also featured is a store where items needed in the game are purchased and a hospital for healing the wounds of battle.

*Tanner and the Jungle Temple* is priced at \$25. For more information, contact The Moonwolf Game Company, 1480F Terrell Mill Road, Suite 712, Marietta, GA 30067.

\* \* \*

#### WORD PROCESSING SIMPLIFIED.

*W-ED*, a small, fast word processor has

been introduced for the 550/555. WyndhamWare, publishers of the program, make no claim that *W-ED* replaces large editors or word processors. They operate under the assumption that the vast majority of writing and editing tasks, such as writing letters, creating batch files and editing small programs, do not require a large, powerful text editor. Hence, *W-ED* was written for simplicity, speed and the small 14K size.

*W-ED* normally writes directly to the screen, bypassing the BIOS, which allows it to operate several times faster than programs using the BIOS (the program can be configured to use the BIOS, however). It supports DOS path specifications and, according to the documentation, cannot be used with MS-DOS versions earlier than 2.0.

*W-ED* is currently available for \$40. For more information, contact WyndhamWare, P.O. Box 729, Renton, WA 98057-0729.

\* \* \*

#### RETURN TO WONDERLAND.

A text processor introduced by Bedlington Computer has the capability to compress text an average of 2.5 to 1, encrypt data with an 80-character keyword, and perform various control code filtering functions and file conversions. Named *ALICE*, for Algorithm for Information Compression/Encryption, the program's theoretical average compression is as much as 4.5 to 1, offering savings in both disk storage space and telecommunications charges.

*ALICE* requires 256K of memory and is available for \$129, or \$79 in a version without the encryption capability. For more information, contact Bedlington Computer, P.O. Box 60741, Sacramento, CA 95860; (916) 344-5064.

\* \* \*

#### ROLLING IN THE CLOVER.

Two new programs are available from Shamrock Software. *A.S.P.*, the *Advanced Statistical Package*, is a statistical analysis system that handles most common statistical needs. Plotting programs for correlation, Histograms and regression are included, with plotting to the printer supported under A-OK DOS or *Picture Perfect*, a separate graphics screen dump utility. A data set construction system allows repeated analysis of a single data set.

Next is *Checkfile*, an integrated

*Continued on Page 92*

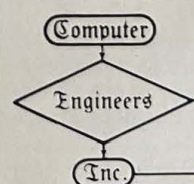
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# READER SURVEY:

We have compiled the following survey to aid us in understanding more about you, our readers. Please fill out and return the questionnaire; it will only take a few moments and will help us to serve you better. **NOTE: On March 1st we will have a drawing of the returned surveys, with the prize being a new Video RAM Board, graciously donated by Sanyo Business Systems Corporation.**

NAME \_\_\_\_\_  
 TITLE \_\_\_\_\_  
 COMPANY \_\_\_\_\_  
 ADDRESS \_\_\_\_\_  
 CITY \_\_\_\_\_ STATE \_\_\_\_\_ ZIP \_\_\_\_\_

**1. YOUR PRESENT SYSTEM'S MEMORY:**

- ☐ 128K ☐ 256K  
☐ 192K ☐ 512K

**2. YOUR PRESENT DRIVES:**

- ☐ one single sided, double density  
☐ two single sided, double density  
☐ one double sided, double density  
☐ two double sided, double density  
☐ one 80 track drive  
☐ two 80 track drives  
☐ hard disk

**3. YOUR PRESENT MONITOR:**

- ☐ Monochrome ☐ RGB  
☐ Other \_\_\_\_\_ ☐ Model \_\_\_\_\_

**4. YOUR PRESENT PRINTER:**

- ☐ Dot matrix ☐ Daisy wheel  
☐ Laser ☐ Color  
☐ Other \_\_\_\_\_ ☐ Model \_\_\_\_\_

**5. WHICH OPERATING SYSTEM DO YOU USE MOST:**

- ☐ MS-DOS 1.25 ☐ MS-DOS 2.11  
☐ DS-DOS Ver. \_\_\_\_\_ ☐ A-OK DOS Ver. \_\_\_\_\_  
☐ Greywolf ☐ Thoughtworks  
☐ CP/M emulator ☐ Other \_\_\_\_\_

**6. DO YOU HAVE AN RS-232 BOARD:**

- ☐ Yes ☐ No

**7. DO YOU OWN A MODEM:**

- ☐ Yes ☐ No  
☐ Brand \_\_\_\_\_

**8. DO YOU SUBSCRIBE TO A MAJOR INFORMATION OR ELECTRONIC MAIL NETWORK:**

- ☐ CompuServe ☐ Dow Jones  
☐ MCI Mail ☐ The Source  
☐ Western Union EasyLink ☐ Other \_\_\_\_\_

**9. SOFTWARE I AM MOST LIKELY TO BUY:**

- ☐ Arcade-type games ☐ Adventure games  
☐ Business applications ☐ Art and/or graphics  
☐ Home applications ☐ Music  
☐ Utilities ☐ Word processing  
☐ Terminal programs ☐ Educational programs

**10. I AM MOST INTERESTED IN ACQUIRING:**

- ☐ More memory ☐ Disk drives  
☐ Hard disk ☐ Joysticks  
☐ Video RAM board ☐ RS-232 board  
☐ Modem ☐ Printer  
☐ Expansion chassis ☐ Monitor  
☐ CP/M emulator ☐ Books and manuals  
☐ Alternate operating system  
☐ Speech or sound synthesizer

**11. I RATE SOFT SECTOR:**

- ☐ Excellent ☐ Good ☐ Fair ☐ Poor

**12. I FIRST HEARD ABOUT SOFT SECTOR:**

- ☐ From a friend  
☐ Saw it on a magazine rack  
☐ Subscription card enclosed in a software purchase  
☐ A dealer referred me to it  
☐ Through Sanyo Business Systems  
☐ Other \_\_\_\_\_

**13. I WOULD LIKE TO SEE SOFT SECTOR OFFER MORE:**

- ☐ Reviews ☐ Utilities  
☐ Games ☐ Hardware projects  
☐ Educational programs ☐ Tutorials

- ☐ Business programs ☐ Machine language info.  
☐ Program listings in languages other than BASIC  
☐ Other \_\_\_\_\_

**14. I THINK YOUR PRODUCT REVIEWS ARE:**

- ☐ Just right ☐ Too short ☐ Too few  
☐ Too critical ☐ Too long ☐ Too many  
☐ Too generous

**15. DO OUR REVIEWERS SEEM:**

- ☐ Well qualified ☐ Qualified ☐ Under qualified

**16. DO YOU WAIT TO SEE A REVIEW OF A PRODUCT BEFORE BUYING?**

- ☐ Always ☐ Usually ☐ Sometimes ☐ Never

**17. NUMBER OF PRODUCTS I HAVE PURCHASED AS A RESULT OF SOFT SECTOR ADVERTISING:**

- ☐ None ☐ 1 ☐ 2-5 ☐ 5-10

**18. DO YOU USE THE ADVERTISERS' INDEX?**

- ☐ Yes ☐ No

**19. ARE YOU HESITANT TO BUY FROM A NEW ADVERTISER?**

- ☐ Yes ☐ No

**20. ARE YOU MORE INCLINED TO BUY AFTER SEEING A PRODUCT ADVERTISED:**

- ☐ Once ☐ Six times  
☐ Two or three times ☐ More than six times

**21. WOULD YOU LIKE FOR US TO FOCUS EACH ISSUE ON A PARTICULAR THEME?**

- ☐ Yes ☐ No ☐ Don't care

**22. WOULD YOU PURCHASE OR SUBSCRIBE TO SOFT SECTOR'S PROGRAMS ON DISK?**

- ☐ Year's subscription ☐ Never  
☐ Occasionally

**23. IS THIS YOUR FIRST COMPUTER SYSTEM?**

- ☐ Yes ☐ No  
☐ No, but I'm still a novice

**24. YOUR AGE:**

- ☐ 18 or under ☐ 26-35 ☐ 46-65  
☐ 19-25 ☐ 36-45 ☐ Over 65

**25. YOUR OCCUPATION?**

- ☐ Engineer/Technical ☐ Business person  
☐ Student ☐ Educator  
☐ Professional ☐ Skilled Trade  
☐ Retired ☐ Unemployed

**26. YOUR HOUSEHOLD INCOME:**

- ☐ under \$10,000 ☐ \$31,000-\$50,000  
☐ \$10,000-\$20,000 ☐ \$51,000-\$75,000  
☐ \$21,000-\$30,000 ☐ over \$75,000

**27. DO YOU USE ANOTHER PERSONAL COMPUTER?**

- ☐ At home ☐ At work  
☐ Brand \_\_\_\_\_ ☐ Model \_\_\_\_\_

**28. WOULD YOU BE INTERESTED IN ATTENDING A TRADE SHOW OF SOFT SECTOR ADVERTISERS**

- ☐ Yes ☐ No ☐ Don't know

**29. DO YOU READ OUR DEPARTMENTS:**

- BASIC Training ☐ Yes ☐ No  
 Mastering MS-DOS ☐ Yes ☐ No  
 Input/Output ☐ Yes ☐ No  
 Business Sector ☐ Yes ☐ No  
 Letters to the Editor ☐ Yes ☐ No  
 Soft Talk ☐ Yes ☐ No

**30. WOULD YOU LIKE SOFT SECTOR TO HAVE AN EDITORIAL PAGE?**

- ☐ Yes ☐ No ☐ Don't care

**31. WHAT WOULD YOU LIKE TO SEE IN SOFT SECTOR THAT WE DO NOT HAVE NOW?**

\_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_



# 30 and Counting

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 The ULTIMATE system for drawing on the Sanyo. Takes a minute to learn the controls, takes a lifetime to explore all their possible uses. Lets your creativity run free! Written totally in Machine Language for unbelievable speed.



# INPUT/OUTPUT

**Q.** I have an MBC-555 with single-sided drives and MS-DOS 1.25. Most of the articles and discussions are about the MS-DOS 2.11 version. In your opinion, is the upgrade to MS-DOS 2.11 worthwhile? I plan to upgrade to a rigid drive in the future and would rather spend the money on a hard drive than double-sided drives.

William Locke  
Ocala, FL

**A.** For the average user of single-sided drives, MS-DOS 1.25 is adequate. Since you are thinking about upgrading to a rigid (hard) drive, I recommend that you upgrade to 2.11. Most suppliers of hard drives include a device driver that supports their particular hard disk unit under 2.11. I personally have designed several hard drive interfaces and the appropriate software to interface the DOS to the hardware. My system runs a special version of MS-DOS 1.25. I would recommend a version of 2.11 for most people that use their machine in business, since most programmers are more comfortable with the DOS-level interface, and future programs will only run on DOS 2.11.

Since you are thinking about a hard drive, you should also think about double-sided drives or, possibly, double-sided, 80-track drives, for backup purposes. With double-sided, 80-track drives and a supporting DOS, one drive can hold over 0.8 megabytes. With this type of capacity, I can backup my entire 10 megabyte hard drive to about six diskettes as opposed to about 30 single-sided diskettes.

Sanyo's MS-DOS 2.11 comes on a double-sided disk. You can make a bootable, single-sided disk by using the following command:

```
FORMAT A:/1/S[/8[/V]
```

This command tells the format program to format single-sided (/1), with a system (/S), and optionally, an eight-sector disk (/8) and volume name (/V).

**Q.** I tried the Goldmine program in the October issue (Page 55) on my Sanyo 555 which only has 128K. I am curious as to why the program works in my 128K machine. In your October column, ("Input/Output," Page 48), you

(Tim Purves is an expert on the Sanyo 550/555 series computers and is an experienced programmer in assembly code, PASCAL, C and BASIC. He is available to answer any questions that the readers of SOFT SECTOR might have. All questions should be addressed to SOFT SECTOR, P.O. Box 385, Prospect, Ky. 40059.)

imply that the GET and PUT commands require 192K and the Sanyo Operator's Guide states 256K.

Carl Hoff  
Dover, TN

**A.** The GET and PUT commands will work fine in a 128K machine, providing the area that your PUT or GET will fit in the array space defined. Granted, the more memory you have, the larger array size you can define, thus you can GET or PUT a larger portion of the screen. In my experience, with an average sized program in a 128K machine, there is seldom enough room to define an array to allow me to GET or PUT a sizable portion of the screen. The GET and PUT commands seem to be faster when an integer array is used. In general, the dimension size of the array can be calculated by knowing the size of the area to be saved or restored by the following equation:

xbytes = ((abs(x1-x2)+7)/8	Calculates bytes in the x plane
ybytes = abs(y1-y2)+1	Bytes in the y plane
size = xbytes * ybytes*3	Total bytes=xbytes * ybytes * three colors
size = size + 4	Add a four byte header

dimension size:

Integer size/2	Integer variable size is two bytes
Single size/4	Single variable size is four bytes
String size/4	String variable size is four bytes
Double size/8	Double variable size is eight bytes

For example to get the area at (0,0)-(20,10):

```
xbytes = (abs(0-20)+7)/8
ybytes = abs(0-10)+1
size = (xbytes * ybytes *3+4)/2
size = 52
```

Then the following program segment will get that portion of the screen:

```
10 DEFINT A-Z: 'Define all variables as INT
20 DIM A(52): 'Define the array
30 GET(0,0)-(20,10),A: 'Get the screen
```

**Q.** Can you briefly state the advantages of the Intel 8087 NDP (Numerical Data Processor)? Do programs automatically use this chip for math operations? Are they readily available and what do they cost?

Greg Peckman  
Portland, OR



**A.** The 8087 NDP and the 8088 act as coprocessors. They share the same instruction stream and can perform parallel execution. The 8088 has a set of ESCAPE instructions, and when the 8088 executes an ESCAPE, the 8087 NDP detects this and then performs the requested function while the 8088 marches on. The programmer also can force the 8088 to wait until the 8087 NDP is finished before it continues.

Contrary to what many think, plugging in an 8087 NDP does not automatically make programs execute faster. Programs must be specifically written to use the 8087 NDP.

There are two ways of implementing the 8087 NDP: one method is in-line code and the other is subroutine libraries. The preferred method for execution speed is the in-line method. The in-line method creates programs that are larger. Also, the internal number format is usually in the format of the 8087.

Generally, the subroutine method generates smaller, slower programs. The subroutine method usually involves data conversion of a program's floating point format to the 8087 NDP format before the function and then back again to return the value to the program.

As it is clear to see, the in-line is faster because no conversions take place. It is also interesting to know that the 8088 can perform integer math more quickly than the 8087 NDP. The 8087 has seven different data formats, including one format that is 20 significant digits. It can perform basic math, internal comparisons, transcendental functions, and has several internal constants. I have seen the 8087 NDP available in single quantities for about \$200. I haven't installed one in a Sanyo yet and would like to hear from someone who has.

**Q.** *If it's possible to write a CP/M emulator, why can't someone write a machine code program to make the Sanyo emulate the IBM?*

Robert Cole  
Bloomington, IN

**A.** Why write a software emulator when the biggest problem is the hardware? The biggest problem that I have seen is programs that write directly to the IBM screen. Sanyo has realized this and they have come out with the "Video Ram" or "Lotus" Board. This board gives the Sanyo an IBM-compatible color graphics card. With this board, programs such as *Lotus 1-2-3*, *SuperCalc III* and *PMATE* run with no changes. It may also be nice to know that after modifying the Microsoft *Flight Simulator*, I have

gotten it to function. With the introduction of the "Lotus" board at COMDEX in November, this will give the MBC-550/555 a great shot in the arm in the direction of IBM compatibility.

**Q.** *What is an "Interrupt Trap Halt"? I seem to get a lot of these when using software meant for the IBM PC.*

Dave Blossom  
Livonia, MI

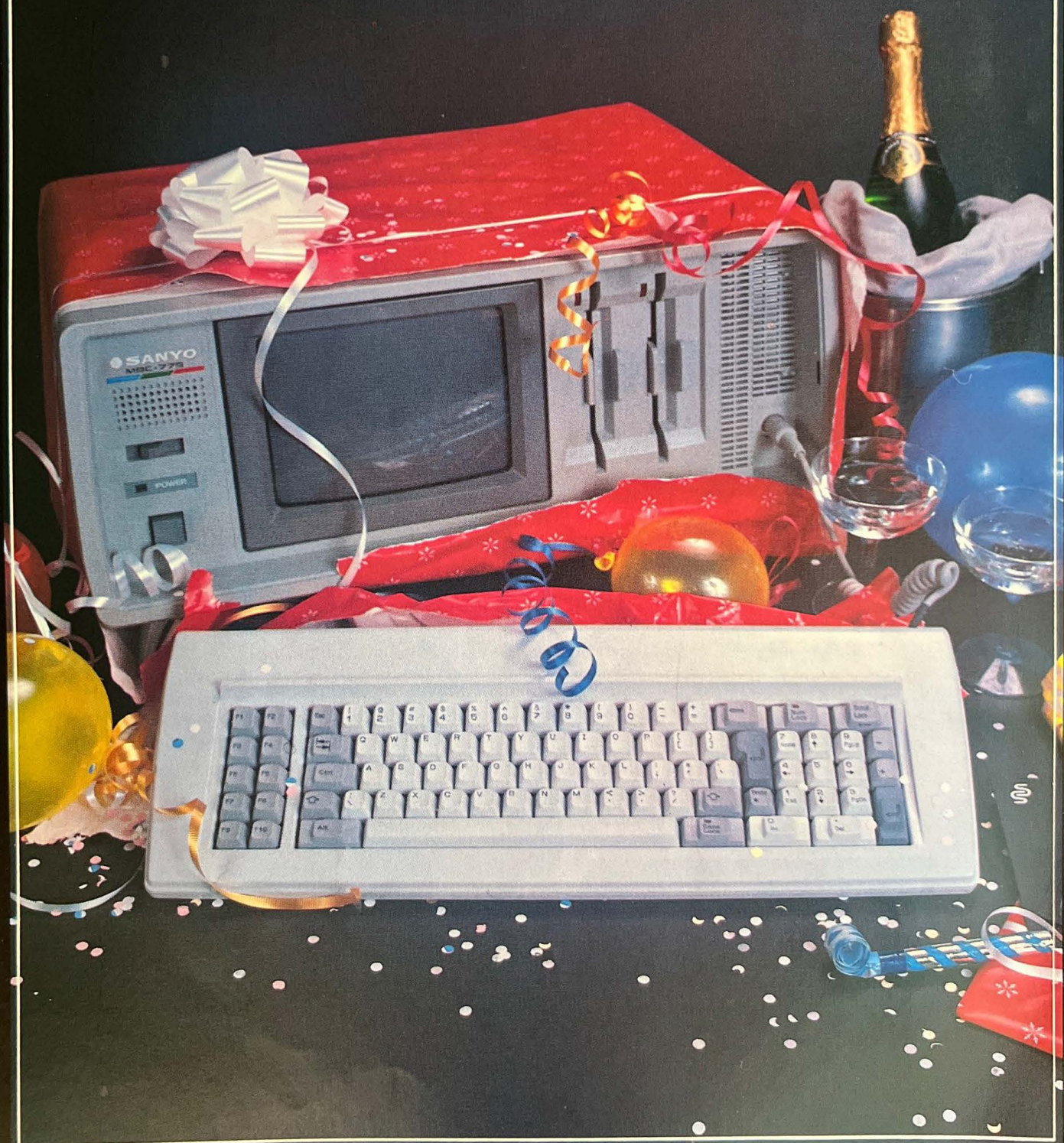
**A.** The 8088 CPU has 256 software/hardware interrupts. When it receives an interrupt, it first pushes the flag CS and the IP registers to the stack. The 8088 then multiplies the interrupt number by four to calculate the address of the interrupt vector. Next, it loads the IP register from the first word location of the interrupt and the CS from the second word location. The 8088 now starts executing the code found at the location pointed to by the CS and IP (CS:IP) until it finds an IRET instruction, at which point the program returns to the point where the interrupt occurs. In the Sanyo and the IBM, the software interrupts are used to access the BIOS calls and DOS functions. In the Sanyo, undefined interrupts are pointed to a routine that prints "Interrupt Trap Halt" and then halts the system. There are two ways this can occur:

- 1) A program issues an INT XX call that is defined on the IBM PC and expects it to return some value. Rather than return some wrong value, the Sanyo simply replies "Interrupt Trap Halt" and quits. The solution is to find out what the program needs and replace the interrupt function with one of your own.
- 2) The other cause is when a program starts executing wildly out of control. This can occur when there is a memory flaw or if the stack has overflowed or overwritten. Or it can occur just from a plain bug in the program you are working on. Normally, machine language programmers are the ones who see this message the most.

Several people I have talked to have replaced the HLT instruction in the BIOS with an IRET. This change results in the message "Interrupt Trap Halt" to be printed and then the program continues. In my opinion this is very dangerous. If the program is running wildly out of control, anything can happen, including writes to disk. Just imagine if the directory is overwritten, all is lost. On a hard drive this is a disaster.









*A special report on the machine that promises power, portability  
and near-total rapport with the IBM PC*

# SANYO'S MBC-775 PORTABLE

## THE NEWEST MEMBER OF THE FAMILY

By Charlotte and Brian Stone  
Soft Sector Contributing Editors

Last month we told you about one of two products that we were introduced to at our meeting with Sanyo. This month you will get the second half of the story. We are sorry to say that this is more of a "what's new" story than the actual hands-on review it was to be. We were originally going to have the new Sanyo MBC-775 "The Manager," but schedules and the fact that there are not enough samples to go around prevented it. We will have a sample machine in the near future and will do an in-depth evaluation with software testing.

The Sanyo MBC-775 "The Manager" is a totally IBM PC compatible computer. This machine is not an upgraded MBC-550 series machine, but a completely new product that is 99.44% compatible.

The following information is from a Sanyo press release:

Sanyo MBC-775, high performance, 16-Bit MS-DOS Portable Color Computer, "The Manager." The Sanyo portable computer is a PC compatible system containing a built-in, nine-inch color monitor, two 360K slim-line disk drives and an 84 key, full function detachable keyboard. The system board comes standard with 256K of memory expandable to 640K and the MS-DOS 2.11 operating system. Two

expansion slots will accept PC compatible boards. Bundled with our exceptional value of software, the Sanyo MBC-775 is an excellent decision for your business and personal use.

### Features:

- 16-bit 8088 CPU with MS-DOS 2.11 operating system.
- 16 color graphics capability with 320 by 200 pixels and high resolution 640 by 200 pixels in monochrome mode.
- LED indicators on the CAPS LOCK and NUM LOCK keys.
- 8 MHz clock speed for fast processing of data.
- 80 column by 25 line display and special double-wide character 40 column by 25 line display.
- Built-in, nine-inch RGB color display for excellent color graphics.
- GW-BASIC for enhanced PC compatibility.
- 84 key keyboard with numeric keypad and special function keys.
- Centronics parallel printer port.
- Two expansion slots, capable of accepting Quadram, Tecmar and other PC compatible cards. These are both long slots.
- Outputs for RGB and black-and-white monitors standard.
- Onboard provisions for 8087 chip.



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- Speaker for sound, frequency generator for tone production.
- Physical size:  
Main unit 20½ inches (W) by 16¼ inches (D) by 8½ inches (H)  
Keyboard 19½ inches (W) by 7¼ inches (D) by 1¾ inches (H)  
Weight approximately 26 pounds
- Sanyo bundled software which at this time will include *WordStar*, *CalcStar*, *GW-BASIC* and *MS-DOS 2.11*.

In addition to the above listed software you will be able to run PC versions of *Lotus 1-2-3*, *Flight Simulator* and practically all of the software for the PC.

Sanyo will offer an RS-232 serial communication board and a memory expansion board. The Sanyo CRT-30 and CRT-36 monochrome monitors and the CRT-50 and CRT-70 RGB monitors will be optional accessories for displays larger than the built-in, nine-inch RGB monitor. Any centronics parallel, dot matrix or daisywheel printer will also function off the built-in printer port.

We did have an opportunity to try the machine for a short period of time and the keyboard is one of the nicest that we have had the opportunity to work with. The feel is excellent and you will feel comfortable with it immediately, unlike the PC keyboard. There are two built-in lifts to adjust the keyboard to a good typing height; the attaching cable is long and flexible, letting you position the keyboard where it will feel comfortable.

All of the above information falls into the good news category. Now for the best part, the price. No it's not \$3,495

or even \$2,995, but \$2,599. That's right, all of the above features and software for only \$2,599, with Sanyo quality and reliability included at no extra cost. With this kind of price and product, the name Sanyo will really enter the PC compatible market place and make itself known.

The MBC-775 "The Manager" will be introduced at COMDEX '84 and should be available for delivery from your Sanyo dealer late in December or early January, 1985. We're sure that there will not be thousands of machines available to start, so if this is the computer that you have been waiting for, you'd better get to your dealer and reserve one right away. At prices like this, the line is probably going to be a long one.

As we stated last month, Sanyo had reached step three of their game plan; "The Manager" is step four, and with this kind of track record, step five should really knock our socks off. At this time we do not know what step five is, but we will keep our ears open and let you know as soon as we are able. Now, all we can do is work with our MBC-555 and await the arrival of our MBC-775 so we can really give it a workout and let you know what the results are.



*(The authors, Charlotte and Brian Stone, have been involved with computers since their purchase of the original Radio Shack Model I in July of 1978. Since April 1984, Charlotte has been using a Sanyo in her daily work routine as office manager for a Detroit firm. Brian has been using a variety of Sanyos since May of 1983. Of the five computer systems they presently own, two are Sanyos.)*

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**EXT. 241**

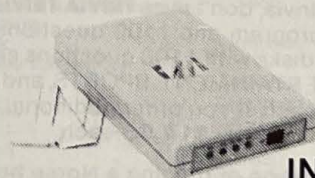
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Continued from Page 83.

package of programs which creates a method of keeping track of financial records. Creating a relational database of financial records, *Checkfile* allows sorting and recall by name, check number or any of 18 coded categories. It protects the data with a password feature and supports cash flow analysis and sort displays to either the screen or printer.

A.S.P. is currently available for \$39.95, including a 50-page manual. *Checkfile* is priced at \$12.95. For more information, contact Shamrock Soft-

ware, P.O. Box 3445 CS, Moscow, ID 83843; (509) 878-1714.

\* \* \*

**A GRAPHICS SCREEN DUMP** has been introduced by J&M Software that will print the graphics characters in three formats: full-size upright, compressed upright, and full-size sideways. *Video Printer* also includes a feature to dump ASCII characters that allows the user to define the area of the screen that he wishes printed. Each function is implemented by the use of SHIFT-

CONTROL and a function key, with the ESCAPE key cancelling any printing function.

*Video Printer* is printer specific and is currently available in versions for the Star Micronics Gemini-10X, the Mannesman-Tally Spirit 80 and the Epson RX-80, with a version under development for the HP Ink Jet Printer. The program is priced at \$45 from J&M Software, 400 Lansing Road, Lansing, MI 48910.

\* \* \*

## COMMUNICATION SOLUTION.

Solution Software has introduced a communications program that operates on the Sanyo 550/555. *VersaCom* emulates the DEC VT100 terminal, a common terminal definition. It works with VAX's full-screen editor EDT, and it conforms to the ANSI standards. It responds to all of the commonly used VT100 instructions and also supports the Kermit file transfer protocol for transferring files between a microcomputer and a mainframe, including eight-bit quoting for transferring binary files and repeat-count quoting for compression of data as it is transmitted.

*VersaCom* is currently priced at \$35, plus \$5 for shipping and handling, and a 45-page manual is included. A demonstration diskette with a limited version of *VersaCom* is available for \$10. For more information, contact Solution Software, 3421 N. 1st Ave. #120, Tucson, AZ 85719; (602) 323-0841.

\* \* \*

**dbMAN**, a relational database manager, is being offered to the public by the VersaSoft Corporation. *dbMAN* is similar to *dbASE II* and has many of the major features of *dbASE III*. *dbMAN* can open 10 database files simultaneously and treats all open files as being active.

*dbMAN* supports local memory variables, with a command file that creates a new set of 64 local variables when it is called and the variables are automatically released when it returns, giving the user large numbers of memory variables.

*dbMAN* is presently priced at \$292 and is available from the VersaSoft Corporation, 723 Seawood Way, San Jose, CA 95120; (408) 268-6033.

\* \* \*



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**ASTROLOGY** — This program calculates natal horoscopes to an accuracy of about 1 minute of arc. It calculates all planet positions, moon, nodes, midheaven, ascendent, house cusps in five different house systems, all aspects, and harmonics. It does tropical or sidereal charts using the geocentric or heliocentric coordinate system. The five house systems available are Regiomontanus, Equal, Koch, Campanus, and Placidus. The orb for aspects can be specified within the range of 1 to 9 degrees, and even the minor aspects are computed. All you have to know is the time and place of birth. This program does hours of calculations in just five minutes, and is in use by many professional astrologers. **\$34.95**

**TRIVIA TRIVIA** — As many of you know, trivia fans are the nicest people, and now your favorite computer can be magically transformed into the ultimate trivia game. This game comes with 1100 questions in five categories, and there are already four more question disks available with 1100 questions each. That's 5500 questions!! You can play **TRIVIA TRIVIA** by yourself or up to four can play against each other, and you have options to set the game length. Educators will want to note that a program is included to develop your own questions disks easily, and your students can play **TRIVIA TRIVIA** and learn their lessons as a happy side effect. If you like trivia, don't miss **TRIVIA TRIVIA**. The game with the question disk development program and 1100 questions in five categories is **\$34.95**. Additional question disks with 1100 questions each are available with questions on the BIBLE, ENTERTAINMENT, SPORTS, and questions for CHILDREN, and these are **\$19.95** each. If you order additional question disks at the same time as the game they are only **\$14.95** each.

**VIKING!** — This famous simulation of running a Norse holding while you try to become King or Queen is finally available for your Sanyo. Now you can experience the most popular simulation of all time and find out for yourself why clubs formed all over the world to play this game. Do you have what it takes to start as a Land Holder, fight off the raiders and rats, acquire land, build an army, equip expeditions, set taxes, and manage your many assets? There is no other simulation that compares with **VIKING!** For 1 to 4 players, games take 2 to 4 hours, and there is a save the game feature. — **\$34.95**

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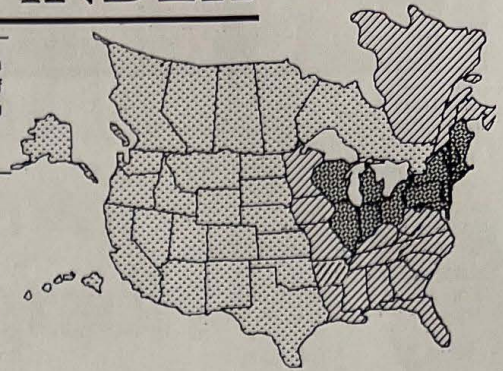
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A-OK Computers	51, 53
AA Computer Exchange	63
A.J. Software	77
B-T Distributors	44
BGW Systems	80
Binary Tree Technology	82
Block Marketing, Inc.	19
Business Machine Consultants	26
C R Distributing	66
CM Associates	63
Certified Computers	72
Comp-U-Type	54
CompuSoft	54
Computer Associates, Inc.	91
Computer Creations, Inc.	55
Computer Engineers, Inc.	18, 83
Computer Gallery, Inc.	23
Computer Solutions	72
Computer Toolbox, Inc., The	39
DISKcount Software	69
Displayed Video	74
Diversified Computers	80
Federal Hill Software	37
Future Systems	28
Greywolf Technologies, Inc.	48, 49
Hammer Industries, Inc.	28
Home Office Electronics Business Systems	78
Information Associates	71
Integrated Technologies	26
ICR FutureSoft	5
I TH Inc.	77
J & M Systems, Ltd.	IBC
James River Group, Inc., The	79
La Plata	21
Lemberger Company, The	78
Level IV Products, Inc.	20
Michigan Software Distributors, Inc.	41
MichTron	IFC, 15, 85
Micro Equipment Corporation	33
Migraph Software	50, 72, 76
M.W.S. Computers	41
Moonwolf Games	33
Oakwood Publishing	70
Olympic Educational Software	11



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Owl-Services	12
Palm Bay Software	28
Pascal and Associates	12
Peripheral Products Distributing	50
Port One	44
Prickly-Pear Software	92
Sanyo Canada	45
Sanyo	27
Sanyo City	73
Silver Fox Computers	29
Synergistic Software	61
Syntel Corp.	3
Systems Peripherals Consultants	25, 37
Tampa Bay Digital	44
Tex-Comp Users Supply Company	13
TMP Software	22
TW Technologies	90
Total Learning Systems	7
U.S. Digital Corporation	BC, 81
Wagner Brothers	24, 44
Weaver Street Software	61
WyndhamWare	28
Writing Consultants	69

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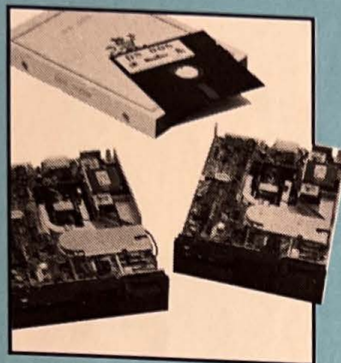


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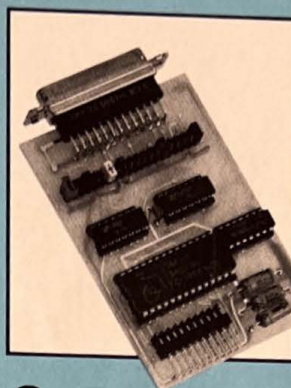
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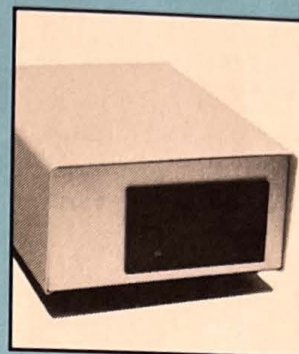
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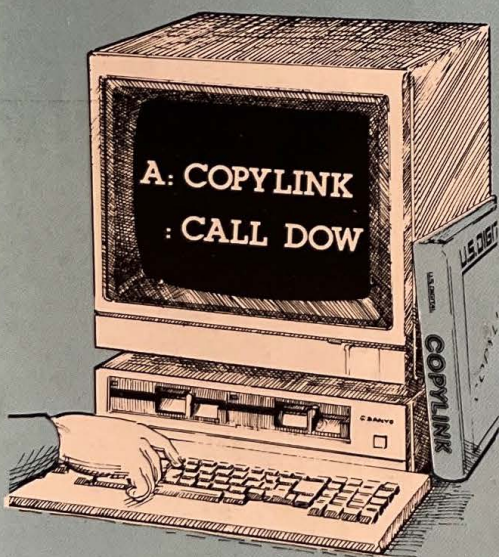
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